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The relationship between pretend play skills and language development in children aged three to five

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Declaration

This work is original and has not been submitted in relation to any other degree or qualification

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Acknowledgments

I would like to take this moment to thank Dr Julie Kirkham for all her help and support over the year. I would also like to thank the University Church Free School and Little Friends Nursery for allowing myself to come in and use their pupils as participants in this study. Finally, I would like to thank my family, especially my boyfriend, for all their love and support throughout my degree, without them I would not be where I am today.

Supervision Log

Date	Purpose	Action Plan
16th November 2017	Discussed ideas for my research proposal and how I could go about investigating the effects pretend play has on language development	Write up research proposal
24th November 2017	Talked about a plan for the research proposal	Submit research proposal
17th January 2018	Discussed the ethics form, and went over what needed to be included and acknowledged	Complete ethics form
31st January 2018	Previously sent a draft of ethics form and it needed some amendments. I had a few questions about the pretend actions task and its purpose, so we discussed this	Hand in ethics form
28th February 2018	Ethics form needed to be revised and resubmitted	Went away and improved the ethics form and included the points that was discussed
27th March 2018	Ethics form required a few amendments	Get written permission off head teacher and hand in the amendment form
25th April 2018	Check up to see how data collection was going, and provide me with some more nursery contacts	Conduct all tests and gather all data
4th July 2018	Check up to see how everything was going, made a brief plan for introduction and what should be included	Write up introduction
26th July 2018	Conduct data analysis	Double check that I am using the correct analysis for non normally distributed results
1st August 2018	Go through introduction feedback, and how to write up results	Write up results section and discussion

SUPERVISOR SIGNATURE:

STUDENT SIGNATURE:

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Abstract

Pretend play is a crucial component within child development, especially with regards to language. Pretend play and language both share commonalities which involve symbolic abilities (Lewis, Boucher, Lupton, & Watson, 2000). This study examined the influence that cognitive and affective aspects of pretend play and symbolic play has on expressive and receptive language development and whether these pretend play domains uniquely predict language development. This study also assessed whether age and sex effects pretend play and language development. A convenience sample of 50 children age three to five years old was used to collect the data. The Preschool Language Scale (Zimmerman, Steiner & Pond, 1997) was used to assess Auditory and Expressive Communication, the Affect in Play Scale – Brief Rating Version (Cordiano, Russ & Short, 2008) was used to measure cognitive and affective pretend play, and the Pretend Actions Task was used to measure symbolic play (Overton & Jackson, 1973). The results suggest that cognitive and affective pretend play and symbolic play did not uniquely predict expressive and receptive language. Only symbolic play was found to be a positive significant unique predictor of expressive language. There was also a significant effect of age on all three pretend play scores and expressive and receptive language, with five year olds scoring higher than four year olds and four year olds scoring higher than three year olds. There was no effect of gender on the play tasks. However, boys scored significantly higher on the receptive language test than girls. These findings demonstrate that pretend play is an important component for language development; however it may not be the only predictor. The results suggest that more research needs to be done in order to gain a greater understanding of the relationship between cognitive and affective pretend play and expressive and receptive language.

The relationship between pretend play skills and language development in children aged three to five

Play has been acknowledged to be a key behavioural characteristic within childhood, as it is one of the most natural and universal phenomena (Daly, 2014). Pretend play is when children take on different roles and act out stories, which has been considered to be integral to children's development as it produces an intersection of affective, cognitive and interpersonal processes (Kaugars & Russ, 2009). Pretend play allows the child to explore enriched environments where they can create a world of pretence (Melzer & Palermo, 2015). Cognitive processes, such as understanding concepts and intelligence, have been found to be involved in pretend play, with more complex pretend play creating higher-levels of cognition which is developed through abstract thought (Bergen, 2002; Brėdikytė, Brandišauskienė & Sujetaitė-Volungevičienė, 2015; Fiorelli & Russ, 2012). According to the early years foundation stage (EYFS, 2012), pretend play is crucial for effective learning, and can be observed from as early as 16 months, until the organization of play ideas and imagination starts to stabilise as the child gets older (Fiorelli & Russ, 2012). During this time, language has also been found to play a crucial role in the developing child (Brooks & Kempe, 2012).

Language allows children to interact with others, and through playing together, they develop their language skills (Lillard, Lerner, Hopkins, Dore, Smith & Palmquist, 2013; Riley & Jones, 2010). The relationship between the two domains is believed to be because they both share commonalities which involve symbolising abilities (Copper, 2012; Lewis, Boucher, Lupton, & Watson, 2000; Udwin & Yule, 1982). According to Gopnik and Walker's (2013) model of play, pretend play emerges from the child's cognition and acts as a process

for learning. Research suggests that pretend play, as a process for learning, and language are interlinked (Bergen, 2002; Gopnik & Walker, 2013; Lewis, Boucher, Lupton, & Watson, 2000). There have been found to be significant positive relationships between pretend play and both receptive and expressive language development (Lewis, Boucher, Lupton, & Watson, 2000). This suggests that looking at both expressive and receptive language is important in the study of pretend play. This provides one of the rationales for the present investigation.

Pretend play has been found to include two processes, cognitive and affective (Russ, 2004, cited in Fehr & Russ, 2016). These two processes have been investigated to find a positive relationship between pretend play and creativity, but not yet with language. During pretend play, affect themes are an important element in developing a creative imagination at a young age (Kaugars & Russ. 2009). Since creativity is an important aspect of language development and pretend play skills, it could be argued that affective and cognitive aspects of pretend play are related to language development. This could explain the connection between both cognitive and affective processes of pretend play and language development (Stagnitti & Lewis, 2015). However, there is a gap in the literature on the relationship between language with cognitive and affective processes of pretend play. Since both language and pretend play involve aspects of cognition and affective processes, it is important to understand the relationship between them. Therefore, this provides one of the main rationales for the present study.

Various terms are used throughout the literature for pretend play, such as “imaginative play, make-believe play, fantasy play, dramatic play” (Fein, 1981, pg 1096). In order to remain consistent, this research will use the term pretend play throughout.

Pretend play and language development

Vygotsky (1978) states that pretend play is where children first start to learn that they are not restricted by the physical properties of an object as they start to use symbols to represent one object as another (Vygotsky, 1978; Stragnitti & Lewis, 2015). For example, a banana can be used as a telephone. By doing this they separate the reality from the meaning of the context which helps children to develop abstract thought (Vygotsky, 1978). Similar symbolic skills are believed to be a vital aspect of using language, as children's understanding of words develops from acknowledging that a word is symbolized by a concept or object (Cooper, 2012). Udwin and Yule (1982) propounded that symbolization and the early formations of concepts are fundamental preconditions for language development. From this theory, they found that symbolic play has a positive relationship with vocabulary and sentence complexity as they were found to be significantly correlated (Udwin & Yule, 1982). Lewis and colleagues (2000) further support this, as they investigated the understanding and production of language. They found a positive relationship between solitary pretend play and expressive and receptive language development, which they believe is because the two domains require conceptual knowledge and the ability to symbolize.

Piaget (1967, cited in Bodner, 1986) viewed cognitive development as a linear process where development is organised into stages which sequentially build upon each other. For Piaget, children often learn from their own experiences in order to construct their own knowledge. Through the development of schemas, children generate new ideas from their past experiences (Piaget, 1967, cited in Bodner, 1986). According to Piaget, language development is formed through a schema which has been learnt by the child

through pretend play. Piaget's theory is heavily debated within the literature. Vygotsky (1962) argued against the notion that play emerges from cognition, and rather from the integration of early speech and communication.

Piaget proposed a set sequence in which pretend play evolves from stage one being when action and meaning are understood by the child, to stage six being the start of representational and abstract thought (1962, cited in McCune-Nicolich, 1981). Whereas, Werner and Kaplan (1963) developed a scale of symbolic representation, entitled 'symbol formation' which was applied to language development (cited in McCune-Nicolich, 1981). From this theoretical analysis, McCune-Nicolich (1981) propounded that if pretend play and language both produce the development of symbolic ability, then the two scales proposed by Piaget (1962) and Werner and Kaplan (1963, cited in McCune-Nicolich, 1981) would be expected to develop in parallel to one another. As a result from McCune-Nicolich's research (1981) as Piaget's symbolic stage progressed, so did the language scale. Significant connections were found between the stages of pretend play and the levels of language development, which support the notion that the two are related (McCune-Nicolich, 1981; McCune, 1995).

However, unlike McCune's (1995; 1981) research, Vygotsky (1962) takes into account the social aspects of play and language and propounded that children learn through communicating with others, especially with those who are more knowledgeable. Children require guidance from knowledgeable others, which promote their cognitive growth through the zone of proximal development. He believed that pretend play is the context in which language skills develop as it helps them to understand abstract thought, which supports the idea that learning precedes development.

Researchers have been investigating the relationship between pretend play and language development for many years (Nicolich, 1975; Ungerer & Sigman, 1981; Yawkey, 1983). Empirical studies dating back to the 1970s have linked pretend play to language development. Nicolich (1975) and Yawkey (1983) found that pretend play positively predicted linguistic behaviour and also pretend play helps develop both oral and written communication. In addition, Ungerer and Sigman (1981) found that children with autism who had higher levels of language comprehension demonstrated significantly more complex acts of pretend play with meaningful sequences than autistic children with low language comprehension. This suggests that since children with autism experience cognitive deficits, their symbolic play skills suffer from serious impairments. Therefore, when children engaged in acts of symbolism during play, such as more object-directed or self-directive functional acts, this was found to positively predict language development (Ungerer & Sigman, 1981).

In more recent years Kirkham, Stewart and Kidd (2013) conducted a quantitative study of 60 three to four year olds and found that pretend play and language were inter-related as they developed alongside each other. However, over time they found that play did not predict children's linguistic abilities at age five. They claim that this is because at that age language precedes and structures the development of pretend play skills. It is unclear within the literature whether pretend play predicts language development, or vice versa. The differences in research findings could potentially be due to the methodologies used. With Kirkham, Stewart and Kidd (2013) using quantitative measures of the Test of Pretend Play (Lewis & Astell, 1997, cited in Kirkham, Stewart & Kidd, 2013) to measure pretend play skills, and the Preschool Language Scale-3 (Zimmerman, Steiner & Pond,

1997) to test the children's overall language ability, they found that language is the predictor of pretend play skills.

However, observational studies have found that pretend play positively predicts language development. Howe, Abuhatoum and Chang-Kredl (2014) observed the effects of 70 sibling interactions. These interactions are important in the study of play because it involves the siblings communicating with one-another which provides an understanding of how they co-construct complex pretend play scenarios. Howe and colleagues (2014) believe that pretend play is important in the development of understanding language. They measured pretend play by analysing play themes from their observations, and measured language following an internal states coding system propounded by Recchia and Howe (2008, cited in Howe, Abuhatoum & Chang-Kredl, 2014). Pretend play was found to be positively associated with the use of adverbs and adjectives. Howe, Abuhatoum and Chang-Kredl (2014) proposed that knowledge references, such as 'I have an idea' suggests the child has divergent thinking, which they claimed to be an important component of pretence to help the child develop a shared understanding of the situation. Observational studies have been argued to be beneficial into the research on play as it allows researchers to understand the true nature of the play in a natural setting (Howe, Abuhatoum & Chang-Kredl, 2014).

An alternative method used throughout pretend play research has been interventions, such as pretend play training which has been used in experimental studies. Play-based interventions, which took place twice a week for a four-week period, were found to have a positive impact on improving children's ability to initiate conversation and increase their comprehension and expressive communication skills (Conner, Kelly-Vance,

Ryalls & Frieche, 2014; Rajapaksha, 2016). Interventions involved various books and play sets which the experimenter used with the child, and each session was based on a different theme, for example “bedtime”. These interventions are believed to have helped children develop more complex play skills, which resulted in higher levels of language skills. This suggests that pretend play increases children’s ability to think imaginatively and creatively which supports their language development (Conner, Kelly-Vance, Ryalls & Frieche, 2014). These findings supports Vygotsky’s zone of proximal development theory, which states that pretend play enhances children’s language ability though communication. Rajapaksha (2016) argued that playing in this way supported the children to experiment with different elements of language, without having to worry about potential consequences of making mistakes. This provided them with confidence as their oral language skills improved.

There are various different aspects of language development with two of the important aspects being receptive and expressive language. Various researches have shown that these two elements of language are important factors in children’s play behaviours (Danger & Landreth, 2005; Frahsek, Mack, Mack, Pfalz-Blezinger & Knopf, 2010; Lewis, Boucher, Lupton, & Watson, 2000; Lyytinen, Poikkeus, Laakso, Eklund & Lyytinen, 2001; McConkey, 1976; Rescorla & Goossens, 1992). Therefore, from these research findings, one of the current study’s main aims is to understand the relationship between pretend play and language development.

Receptive and Expressive language in relation to pretend play

According to Zimmerman and colleagues (1997) receptive skills refer to how the child understands language, and expressive language skills refer to the social communication and vocal development of the child. Children learn to comprehend and express content and meanings of language as they start to understand and apply rules conveyed in language. During early infancy, receptive language skills precede expressive language (Gershkoff-Stowe & Hahn, 2012) and the two domains become relatively equal during preschool (Ryan, Gibbon & O'Shea, 2016). Research has shown that both receptive and expressive language development have a significant relationship with pretend play (Danger & Landreth, 2005; Frahsek, Mack, Mack, Pfalz-Blezinger & Knopf, 2010; Lewis, Boucher, Lupton, & Watson, 2000; Lyytinen, Poikkeus, Laakso, Eklund & Lyytinen, 2001; McConkey, 1976; Rescorla & Goossens, 1992). Therefore, it is important to understand how pretend play interacts with other areas of language development. Investigating receptive and expressive language separately is important because they are very different aspects of language, therefore pretend play behaviours may affect them differently, which provides one of the main rationales for the present study.

Several other researchers have found strong positive correlations between expressive and receptive language and play (Frahsek, Mack, Mack, Pfalz-Blezinger & Knopf, 2010; Lewis, Boucher, Lupton & Watson, 2000). Frahsek and colleagues (2010) conducted a study with 24 to 30 month old toddlers. They used a standardised 'Developmental Test ET 6-6', which examines children from 6 months to 6 years, to assess expressive and receptive language development (Petermann & Stein, 2000, cited in Frahsek, Mack, Mack, Pfalz-Blezinger & Knopf, 2010). Frahsek and colleagues (2010) provided children with

various different props and opportunities for object substitution and tested them on their ability to switch between the real object and the substituted one. They found that there was a high correlation between the semi-structured pretend play scenario observation at 24 months and expressive language scores, but there was no correlation at 30 months. Also, they reported that there was no correlation with receptive language and pretend play performance in either age group (Frahsek, Mack, Mack, Pfalz-Blezinger & Knopf, 2010). The researchers propounded that a weak association between receptive language and pretend play may be due to children applying dual representation. They identified that when children were asked about an object they would refer to it as the real thing, rather than pretence (Frahsek, Mack, Mack, Pfalz-Blezinger & Knopf, 2010). According to DeLoach (2000) a child must be able to mentally represent the object as a symbol in order to achieve dual representation which occurs as children improve their ability to represent functions during object substitution (Lillard, Lerner, Hopkins, Dore, Smith & Palmquist, 2013). These findings support the idea that investigating the two aspects of language separately is important, as there are differences between the two.

Although from a young age expressive language has been found to be correlated with pretend play behaviours, Lewis and colleagues (2000) investigated whether pretend play positively predicts receptive language in an older aged sample. In their England based study they used the Preschool Language Scale-3 (PSL-3, Zimmerman, Steiner, Pond, Boucher & Lewis, 1997) to assess receptive and expressive language development. This test includes two standardized subscales assessing both aspects separately in children aged between two weeks and seven years old. They found that both receptive and expressive language scores were significantly correlated to pretend play scores, which was measured

using the Symbolic Play Test (Lowe & Costello, 1976, cited in Lewis, Boucher, Lupton, & Watson, 2000) and the Test of Pretend play, which assesses different play skills by observing the children's in structured and unstructured settings (Lewis & Boucher, 1997, cited in Lewis, Boucher, Lupton, & Watson, 2000). The PSL-3 is based on a one-to-one interaction with the child, unlike Frahsek and colleagues (2010) which involved the mother who gave verbal instructions to the child. This could explain the inconsistencies within the literature, as parental involvement in play can result in different play behaviours by the child (Lindsey & Mize, 2001). Although the two tests measure receptive and expressive language in similar ways, the 'Developmental Test ET 6-6' is highly used within the German population (Macha & Petermann, 2008). With the PSL-3 being based in England and it is consistently reliable throughout previous research (Everitt, Hannaford, & Conti-Ramsden, 2013), it makes for a more preferable measure for the current study.

Researchers have also found evidence from atypical populations and experimental studies which support this theory in relation to expressive language (Lyytinen, Poikkeus, Laakso, Eklund & Lyytinen, 2001; Rescorla & Goossens, 1992; Stanley & Konstantareas, 2007). Rescorla and Goossens (1992) found that a delay in expressive language skills mirrors a delay in pretend play skills. When toddlers with expressive language impairments were compared to toddlers with normal language development, they were reported to have fewer occurrences with pretend play acts (Rescorla & Goossens, 1992). This suggests that their level of pretend play ability was poorer than their age-matched counterpart. However, when the child was matched based on their language, rather than age, they found that their pretend play ability was the same. This supports the importance of expressive language in play performance.

In a more recent study, Stanley and Konstantareas (2007) assessed 101 autistic children's receptive and expressive language with their pretend play abilities. Using the Reynell Developmental Language Scales they found that expressive language was a significant positive unique predictor of pretend play with poor expressive language abilities demonstrating lower pretend play skills. Lyytinen and colleagues (2001) found similar results with children who were at risk of dyslexia based on family history. Dyslexia is a language-based reading disability, which can cause language impairments (Lyytinen, Poikkeus, Laakso, Eklund & Lyytinen, 2001). Their empirical results found that pretend play at 14 months was a positive predictive factor of receptive and expressive language at 3 years. With a difference in risk group of expressive language, it shows that children who have a history of dyslexia and late talking are at higher risk of delays in language acquisition, which is demonstrated in their ability to pretend play (Lyytinen, Poikkeus, Laakso, Eklund & Lyytinen, 2001). Both these studies used the same standardised tests to measure language and pretend play, which suggests that the findings may produce similar results due to the nature of the methodology.

Longitudinal studies have been argued to be useful in understanding play behaviours (Kirkham, Stewart & Kidd, 2013). Using longitudinal research like Lyytinen and colleagues (2001) allows the researcher to understand the progressive nature of the children's pretend play abilities and see whether the ability to pretend play is a predictive factor. Kirkham, Stewart and Kidd (2013) have also used a longitudinal design which allowed them to detect the developmental changes of children which extend beyond a single moment. This enabled them to explore the long-term effects of pretend play, which lead to the conclusion that language precedes play after the fourth year. With Lyytinen and

colleagues' (2001) study only investigating the longitudinal effects up until age 3, it would be interesting to assess whether there is a change on the predictive direction, like within Kirkham and colleagues' (2013) investigation.

Research on interventions has found evidence to support the notion that pretend play effects expressive language (Danger & Landreth, 2005; McConkey, 1976). In a case study of a three year old girl, McConkey (1976) found that her mostly single-word utterances in her expressive language improved after 20 play sessions. Her overall language improved from 60% total utterances to 88%, with the mean number of two-word utterances increasing from zero to nine. This suggests that pretend play has a positive effect on expressive language. Although this was just a single case study, Danger and Landreth (2005) went on to administer an experiment with eleven children aged four to six to improve their speech problems. They found that children who experienced 25 group play therapy sessions significantly increased their expressive and receptive language skills. This study supports the use of play therapy as an effective intervention strategy for children who have language impairments, especially to help improve expressive and receptive language skill (Danger & Landreth, 2005). Play therapy is argued to help language development because the play therapy promotes more opportunities for pretend play. They provided 30 different toys which allows the child the opportunity to play with what they wish which would enhance their language development (Danger & Landreth, 2005). Although the study was longitudinal and the long-term effects of the therapy could be assessed, the participants' physical and emotional developmental changes are likely to impact the outcome of the treatment (Danger & Landreth, 2005). In addition, this sample

was extremely small, which could affect the statistical power of the results; therefore it is important that further research is conducted.

Different types of pretend play and their relationship with language

Just like language has difference components, so does play and these have been studied within the literature. Pretend play is often considered an integral aspect of children's development because it represents a crossover between cognitive and affective processes (Kaugars & Russ, 2009). These two processes have been identified by Russ (2004, cited in Fehr & Russ, 2016), who defines cognitive processes as the involvement of imagination, symbolism and organization of the pretend story; and affective processes involve the emotional expression within the story (Russ, 2004, cited in Fehr & Russ, 2016). Pretend play emerges from the child's cognition as they explore different environments and assign meaning of play objects to the real-world (Melzer & Palermo, 2015). When children incorporate pretence into their play, they express positive and negative emotions through play (Kaugars & Russ, 2009).

In a study of creativity in young children, Kaugars and Russ (2009) found that the affective aspects of pretend play were related to creativity, with children expressing more emotions during their play. This suggests that pretend play has an important role in advancing cognitive development (Duncan & Tarulli, 2003). They argued that the affect themes in pretend play are important to developing creative imagination at a young age (Kaugars & Russ, 2009). The importance of pretend play and creative imagination is demonstrated in the work of Stagnitti and Lewis (2015) who found that pretend play was a strong positive predictor of narrative re-telling abilities, which involve a creative imagination. Since oral narrative skills are an important aspect of language development,

it could be argued that the affect themes in pretend play are also related to language development.

Singer and Singer (2009) stated that problem solving is evident in pretend play as a cognitive process and it is also an important aspect of language development (Baldo, Dronkers, Wilkins, Ludy, Raskin & Kim, 2005). This suggests that since there is already evidence for pretend play having a positive relationship with language development, language could also be related to the two different aspects of pretend play. When children experience affect states and act out affect themes during their pretend play, this should facilitate divergent thinking, which refers to the way children solve problems (Wyver & Spence, 1999). Divergent thinking has been found to be an important component of pretence when understanding the play situation (Howe, Abuhatoum & Chang-Kredl, 2014). Through observing pretend play scenarios Howe and colleagues (2014) found positive associations between complex pretend play and language, they measured this by the ability to use symbolic skills to transform ideas. This suggests that there could be positive relationships between affective and cognitive aspects of pretend play with language development.

Although there is recent evidence of the relationship between language and pretend play (Lillard, Lerner, Hopkins, Dore, Smith & Palmquist, 2013), there is a gap in the literature with whether cognitive and affective processes of pretend play are related to language, in particular receptive and expressive language skills. Cognitive and affective processes are important aspects of pretend play; therefore they should be present in language development (Russ, 2004, cited in Fehr & Russ, 2016). The present study will utilise the Affect in Play Scale as it has been demonstrated to be a valuable tool to assess

the development of affective and cognitive aspect of play in preschool children (Kaugars & Russ, 2009). The focus of the present study is to expand current knowledge and examine whether the two processes of pretend play predict expressive and receptive language.

In addition to cognitive and affective processes of pretend play, symbolic play has been found to assist the development of language (Lewis, Boucher, Lupton, & Watson, 2000). As mentioned previously, Udwin and Yule (1982) proposed that symbolization during play both preceded and developed alongside language. A child's ability to substitute objects is an important element of symbolic play. This ability has been found to strongly correlate positively with language development (Orr & Geva, 2015; Stagnitti & Lewis, 2015). A year long prospective study supports the theory that the ability to use symbols during play is related to language development (Orr & Geva, 2015). Pretend play vignettes were micro-coded and found through observations that children symbolised an object to represent something else which was strongly correlated with language development (Orr & Geva, 2015).

According to Vygotsky (1967), symbolic play develops along with the child. First the child uses object substitution throughout play by representing one object as another. This develops into playing without any object present (Vygotsky, 1967). The use of imaginary objects during play is a complex act of symbolic play (Carlson, White & David-Unger, 2014). Research shows that children depend on their imagination throughout play when they are at pre-school age, such as eating imaginary food off an imaginary plate (Carlson, White & David-Unger, 2014). Previous research by Elder and Pederson (1978) investigated the differences in the representation of absent objects. When they asked children to do an action, such as comb their hair, they found that when the meaning of an object or action

is fully understood by the child, they performed the action with the absence of the object (Elder & Pederson, 1978). These children were able to perform the task with objects that were similar and dissimilar to the one required for the action. This suggests that their understanding of concepts is positively related to their ability to pretend play. Therefore, the present study aims to investigate whether the ability to play symbolically predicts language development, since language also requires conceptual knowledge.

Moreover, in a study of language delays in children with Autism, Stanley and Konstantareas (2007) found that greater language impairment showed lower skills of symbolic play. They suggested that language development is a prerequisite to symbolic play. They also found that expressive language skills, but not receptive, was associated with higher levels of symbolic play skills, and concluded that symbolic play is more strongly related to the ability to express language because both domains require the generation of words or actions which the child does independently (Stanley & Konstantareas, 2007). Thus, it is important to understand the relationship with each form of pretend play and whether they uniquely predict receptive and expressive language skills.

Therefore, from these research findings, one of the study's main aims is to understand the relationship between the different types of pretend play (cognitive, affective and symbolic) and their relationship with language development.

Effects of age

Pretend play and using ones imagination serves as an engine for learning (Gopnik & Walker, 2013). The ability to play has been claimed to be crucial in the development of the child, for as the child gets older, their pretend play ability improves (Piaget 1962, cited in McCune-Nicolich, 1981). Therefore, it is important to understand the development of pretend play and how children use play from an early age (Daly, 2014). A baby begins to develop the ability to play from a few months old with their primary care-giver. This is often through adults creating a play atmosphere in which the baby will laugh and smile. During the primary-aged years, it is noted that children construct their knowledge and improve their development through play (Riley & Jones, 2010). Play is one of the most important avenues for child development and it is estimated that by the time the child is 6, they will have engaged in more than 15,000 hours of play (O'Connor, 2014).

In order to understand the development and relationship between pretend play and language, it is important to gain an understanding of the development in children's ability to play as they get older. Previous research findings suggest that there is an age difference in the total scores of pretend play between two years and two and a half (Frahsek, Mack, Mack, Pfalz-Blezinger & Knopf, 2010). Brėdikytė, Brandišauskienė and Sujetaitė-Volungevičienė (2015) conducted an observation of 454 children from eighteen months to seven years. They aimed to gain an understanding of the level of pretend play within different age groups. Their data analysis demonstrates that young children, aged 18 months to three years, do engage in early stages of pretence and the level of pretend play increases as the child gets older, and develops into more elaborated forms of pretend play

such as playing with substitute or imaginary objects and assuming roles and following the rules of their roles (Brėdikytė, Brandišauskienė & Sujetaitė-Volungevičienė, 2015).

Playing using object substitution has been argued to be a complex form of pretend play which stimulates sophisticated cognitive activity (Szokolszky, 2016). This type of play requires the ability to think of one object as representing another, for example a pillow representing a stove. Using pretend objects and symbolically representing them had been evidenced to increase with age (Brėdikytė, Brandišauskienė & Sujetaitė-Volungevičienė, 2015). Research findings demonstrate that children under the age of three and a half failed to show evidence of the ability to play using object substitution and failed to play with the absent object (Elder and Pederson, 1978). Overton and Jackson (1973) found that three and four year olds would use a body part to represent an absent object, whereas older children would symbolically represent that object.

Similar results have been found in a more recent cross-sectional observation. Brėdikytė and colleagues (2015) found that younger children aged eighteen months to three years mainly used real objects as they intended to be used, and not use elements of pretence. Whereas older children, from ages four to seven used object substitution, while the majority of six to seven year olds used an imaginary object during play (Brėdikytė, Brandišauskienė & Sujetaitė-Volungevičienė, 2015). Using this method allowed the researchers to compare the age groups ability to pretend play in a naturalistic environment. This supports Piaget's set sequence in which pretend play evolves (1962, cited in McCune-Nicolich, 1981).

When children pretend play they assume an identity of a role and communicate to peers or objects as if they were this role rather than themselves, which usually occurs

between four and eight years of age (Johnson, 2015). Johnson (2015) suggests that the child would gain an understanding of the skills required for role enactment and have the ability to transform to other people, objects or situations by the time they are at age four. As the child gets older, their ability to take on a role becomes more complex and more elaborated (Brėdikytė, Brandišauskienė & Sujetaitė-Volungevičienė, 2015). Pretend play skills and their related ages are highly debated within the literature as some psychologists believe that role play can be seen from a young age (Daly, 2014). Whereas Brėdikytė and colleagues (2015) found that at age eighteen months to three years, children engaged with a role in play, but failed to continue this and follow the rules of their role for more than a few minutes. Their results showed statistical significance between the different age groups of eighteen months to three, four to five, and six to seven year olds. If the ability to pretend play increases with age, then it can be assumed that the child's language skills also improves with age, which would support McCune-Nicolich's (1981) theory that pretend play and language development progress in parallel to one another.

From previous research, it is clear that at around age four the child starts to develop more complex forms of pretend play (Brėdikytė, Brandišauskienė & Sujetaitė-Volungevičienė, 2015; Elder & Pederson, 1978; Overton & Jackson, 1973). Piaget's theory that children progress from the pre-operational stage towards the concrete operational stage (1962, cited in Johnson, 2015) supports the idea that pretend play improves with age. It is also in line with neuro-psychological research relating to the development and maturation of the brain (Romeo, et al, 2018).

Furthermore, complex forms of pretend play were positively correlated to expressive and receptive language between three and four years of age (Melzer & Palermo,

2014). Epstein (1974) reviewed various studies on cognitive maturation and reported that cognitive maturation advanced by additional spurts and plateaus in three growth cycles at age one, six and ten years. This suggests that as the brain matures with age, cognitive language processes also mature. Recent research suggests that early language exposure in children impacts their linguistic skills in later life (Romeo, et al, 2018). Romeo and colleagues (2018) found the first evidence of children's language environments directly relating to neural language processes. They found that neuroimaging revealed a neural mechanism which brain development is influenced by language experience (Romeo, et al, 2018). These researchers suggested that having conversations with others supports language processing as they exhibit greater activation in the left inferior frontal region. These findings support the theory that communication is involved in language development, and suggests that there is also a link with pretend play.

From aged three to five, children's play and language skills have become more important within the literature as they are seen to develop the most during this age span. Therefore, the current study chose to investigate the effects of age on three to five year olds to understand whether they effect cognitive and affective play, and also symbolic play, as well as expressive and receptive language.

Effects of sex

As well as age influencing play behaviour, the sex of the child also impacts children's abilities to pretend play. Within child development, research has shown that young girls are more likely to engage in pretend play than boys (Li, Hestenes & Wang, 2014). Gmitrova and colleagues (2009) conducted a study which found that girls generally favoured pretend play, while boys preferred constructive play, such as building without an imaginative narrative. Yet, when boys engaged in pretend play, they were more likely to focus on their own individual interests, instead of collaborating with their peers.

Empirical findings suggest that there is a significant difference between boys and girls ability to pretend play (Brėdikytė, Brandišauskienė, & Sujetaitė-Volungevičienė, 2015). They reported that girls achieved higher levels of pretend play and they were more able to engage in abstract thinking. In their observation, girls were more likely to adopt a role in pretend play and keep to the rules and be flexible to change roles depending on the plot of the play (Brėdikytė, Brandišauskienė, & Sujetaitė-Volungevičienė, 2015). Having said this, these findings also state that adopting a role also occurs at age four, as their results show that 40.1% of four to five year olds assumed a role during play which could suggest that age and sex might interact with one another.

Moreover, the ability for object substitution enhances language development (Stagnitti & Lewis, 2015). Yet, Brėdikytė and colleagues (2015) found no statistical significant difference between how boys and girls used the play objects. Having said this, Li, Hestenes and Wang (2014) reported that there is a sex difference in how children play with objects. They found that girls preferred to engage in more abstract pretend play, and use their imagination to represent objects, whereas boys tend to prefer concrete pretend

play where they use an object to represent something completely different. However, only 28 children participated in this study, compared to 454 children in Brėdikytė and colleagues' (2015) study, which could explain the differences in preferred play.

Moreover, Hoffman (1977) proposed that girls are more likely than boys to have an affective response on behalf of someone else's feelings. He claims that they are more able to imagine themselves in the position of someone else which triggers empathetic responses. A more recent meta-analysis supports Hoffman's (1977) claim that girls tend to have more empathy than boys (Christov-Moore, Simpson, Coudé, Grigaityte, Iacoboni & Ferrari, 2016). Having said this, Christov-Moore and colleagues' (2016) review also found that research on the sex differences in affective responses have low statistical power and suggested that research in this area requires considering more specific variables. Since affective themes are an important element in developing a creative imagination (Kaugars & Russ, 2009), it is important to research the effect that sex has on affective and cognitive processes of pretend play in order to expand the current knowledge on affective responses. This suggests that if girls do have more affective responses, it would be assumed that there is a sex difference in affective processes of pretend play. One study found that only girls were rated by their mothers as demonstrating better emotional regulation and more emotional competence with their peers when they engaged in high levels of pretend play (Kaugars & Russ, 2009). This suggests that girls would score higher on the Affect in Play Scale.

With regards to language development, a cross-cultural empirical study found that girls were ahead of boys with their early communicative gestures, vocabulary and in combining words from age nine months to 24 months; this was found to be statistically

significant (Eriksson, et al, 2012). Among the different European non-English speaking cultures, such as Germany and Spain, the differences between boys and girls increased with age. However, their results do not show the long-term sex differences of language. Bornstein and colleagues (2004) longitudinally studied 329 children from age one to age six, and found that during the sixth year the sex differences disappeared. Up until age six, they found that girls scored significantly higher on the Reynell Developmental Language Scale in verbal comprehension and expressive language. This study provides important insights into the sex differences of receptive and expressive language (Bornstein, Hahn & Haynes, 2004). Although the differences fade at six years old, it provides one of the main rationales of investigating three to five year old children, to see whether there are sex differences within this age group. Yet, Eriksson and colleagues (2012) claim that the differences found in their study are the result of robust factors, which are the same throughout different language communities. With the development of play being found to be similar across cultures (Haight, Wang, Fung, Williams & Mintz, 1999), it could be argued that pretend play ability is one of the robust factors Eriksson was referring to. However, it is not the only factor that could impact language development, as research has shown that parental interaction could also be an important factor.

Previous research has shown that although there are differences in sex and pretend play, these could be influenced by their parents (Lindsey & Mize, 2001). Pretend play was found to be more common in daughter-parent dyads, especially daughter-mother dyads. Physical play was found to be more common in son-parent dyads. These children's peer play behaviour was consistent to their play behaviour with their parents. They found that children who engaged in more pretend play with their parents engaged in pretend play

with their peers, and the same was found for physical play (Lindsey & Mize, 2001). Therefore, if pretend play and language are related, parenting differences would presumably affect both skills.

The overall findings of the sex differences are limited (Weiss, 2017) thus; it could be argued that the difference in play choices could impact the development of pretend play skills in young children. If language and play are related then these sex differences should also affect language development. Therefore, from these research findings, one the current study's main aims is to understand the effects that sex has on pretend play and language development.

Hypotheses

This study's main predictions consist of three hypotheses.

Hypothesis one is based the research findings of Lewis *et al* (2000) who found that receptive and expressive language scores were significantly correlated to pretend play skills. The hypothesis is that there will be a positive relationship between pretend play and language development. There will be positive relationships between (a) affective play and receptive and expressive language, (b) cognitive play and receptive and expressive language and (c) symbolic play and receptive and expressive language. To further develop previous research, this study will also investigate which of these types of play is the strongest predictor of receptive and expressive language.

Hypothesis two is based on the findings of Brėdikytė *et al* (2015) who found that the level of pretend play increases as the child gets older. The hypothesis is that there will be a difference according to age on the three types of play (cognitive aspect of play,

affective aspect of play, and pretend actions task) and two types of language skills (expressive language ability and receptive language ability), with a chronological effect of age where four year olds score higher than three year olds, and five year olds score higher than four year olds.

Hypothesis three is based on the findings of Li, Hestenes and Wang (2014) and Brėdikytė, Brandišauskienė, and Sujetaitė-Volungevičienė, (2015) who found that girls engaged in more abstract pretend play and used object substitution more than boys. It is also based on the findings by Bornstein *et al* (2004) who found that up until age six girls performed better on language scores than boys. The hypothesis is that there will be a difference according to sex, with females scoring higher on all measures.

Method

Participants

The current study used a convenience sample to recruit 50 participants between the ages of three to five years eleven months (mean age: 3.98). Participants were recruited from one preschool (N=26) and one primary school, with Reception (N=17) and Year 1 (N=7) in the Chester area (UK). A letter was sent home including an opt-out consent form, which parents returned if they did not want their child to participate in the study. One parent decided their child would not take part, one child chose to withdraw from the study once it began, and three children had English as an additional language so did not take part in the study, resulting in a 90.9 per cent response rate. The number of boys and girls within each age group were relatively equal (See Table 1).

Table 1: The number of males and females within each age group

Age	Females	Males	Total
3	9	7	16
4	9	10	19
5	8	7	15
Total	26	24	50

Measures

Preschool Language Scale-3 (PLS-3; Zimmerman, Steiner, Pond, Boucher & Lewis, 1997).

The PLS-3 has been developed to assess language skills in children from birth to six years eleven months and has been widely used as a measure of language development in children (Conner, Kelly-Vance, Ryalls, & Friehe, 2014; Everitt, Hannaford, & Conti-Ramsden,

2013). The test assesses children's receptive and expressive language abilities by using two standardised subscales, Auditory Comprehension (AC), which is used to determine the amount of language understood by a child, and Expressive Communication (EC), which is used to evaluate the child's communication with others (see Appendix A for example questions).

The test begins at one year below the chronological age of the child. Each task has a pass criterion; if they do not meet this they score a zero. The test will end when the participant has received a score of zero on five consecutive numbered tasks. The raw scores are calculated by subtracting the number of 'zero' scores from the last subscale task administered (see Appendix B for the scoring sheet).

Affect in Play Scale – Brief Rating Version (APS-BR; Sacha Cordiano, Russ & Short, 2008).

The APS-BR is a five-minute standardized play task which has been widely used in previous studies (for e.g., see Chessa et al, 2013; Hoffman & Russ, 2016). The participant was given two puppets and two small building blocks (see Appendix C). They were told to play with the puppet and blocks however they wish for five minutes (see Appendix D). The APS-BR measures the cognitive aspects of the play, and the amount and types of affective expression in the play narrative. Their play behaviour was scored on a four-point Likert scale with three main cognitive scores: (a) Organization – the quality and complexity of the story; (b) Imagination – the child's ability to use pretence and fantasy, and their uniqueness of play; (c) comfort – the child's comfort and enjoyment of play; and then two main affective scores (d) – Frequency of Affect – the amount of affect units expressed throughout play; and (e) Positive/negative tone of affect units – the overall tone of the affect in the story (see Appendix E for how the different points were scored).

Pretend Actions task (Overton & Jackson, 1973).

The pretend actions task is used to assess the complexity of symbolic play in young children (for e.g., see Kirkham & Kidd, 2015). Participants were asked to complete three self-directed action sequences and three directed towards the external world. The self-directed actions were: (a) pretend you are combing your hair, (b) pretend you are drinking from a cup, and (c) pretend you are brushing your teeth. The externally directed tasks required a wooden block and a piece of paper. Participants were asked to: (a) pretend you are hammering this wooden block, (b) pretend you are cutting this wooden block with a knife, and (c) pretend you are cutting this piece of paper with some scissors. The experimenter recorded whether the child used a body part to perform the action (e.g., using a hand to represent the knife) which scored zero points, or whether they used an imaginary object which scored one point. The maximum score was six points, which indicates high symbolic play ability (see Appendix F).

Procedure

The participants had a 15 minute period prior to the first testing session where the researcher joined in on the play, in order to allow them to familiarise themselves. The tasks were divided into two sessions, lasting about 20 minutes each, neither of which was audio or video-recorded. Each child was assigned a participant number so that the scores from the different sessions could be kept together. The scores were recorded on a form (see Appendix A, B, E & F). The participant was taken to a separate room or corridor to take part in the study, where the class teacher could still oversee the study. Session one involved the AC subscale of the PSL-3 followed by the APS-BR. Session two involved the EC subscale followed by the pretend actions task. The order of the sessions was counterbalanced for

each participant. After, the participants were thanked for their participation. The British Psychological Society ethics guidance was followed throughout. Confidentiality and anonymity of the children was maintained by assigning participant numbers. Names were written on a computer document to match children to their participant numbers prior to the second session. These were then destroyed once all data was collected. Up until this point children and parents could withdraw from the study. Consent was provided by the child's parents, along with the child also giving assent to take part. Ethical approval was granted for this study by the University of Chester Psychology Department on the 23rd of March, 2018 (see Appendix G).

Design and Analysis

The study used Spearman's rank, since the results were non-normally distributed, followed by a multiple regression to test the first hypothesis and explore the interrelationships between pretend play and language development. The multiple regression will indicate how well the variables, in this case cognitive and affective pretend play and pretend actions task, are able to predict expressive and receptive language (Pallant, 2013). Two multiple analysis of variance's (MANOVA) were used to test the second and third hypothesis; whether age effects pretend play and language development, and also whether sex differences effects pretend play and language development. For these two tests, age and sex were the independent variables. Two Tukey post hoc tests were used to follow up the MANOVA for the effects of age.

Results

The distribution of the results was investigated through histograms, skewness and tests of normality, which involved the Shapiro-Wilk test to assess the normality of the distribution of scores. These showed that the current data was not normally distributed. By calculating the Z-scores which were more than two standard deviations away from the mean, nine outliers were then detected and deleted. This was an attempt to normalise the data. The tests were conducted again, however, after relooking at the distributions; they indicated that the data was still skewed (see Data Screening File on CD). Instead, the use of non-parametric tests was investigated where possible.

Testing the relationship between language and pretend play

Auditory Communication

One-tailed spearman's rank correlations were used instead of Pearson's, due to the non-distributed data set to assess the relationship between receptive language, cognitive pretend play, affective pretend play and pretend actions task. Raw scores were used from each test. The means, standard deviations and correlations are reported in Table 2. As hypothesized, Table 2 shows that significant positive correlations were found between all measures across the three forms of pretend play and receptive language.

Table 2: Mean overall scores and inter-correlations between receptive language, cognitive pretend play, affective pretend play and pretend actions task (N=43)

	Receptive Language	Cognitive Pretend Play	Affective Pretend Play	Pretend Actions Task
Mean	38.28	6.51	4.30	1.21
Standard Deviation	4.97	3.02	1.20	1.21
Receptive Language	-	.545**	.522**	.439*
Cognitive Pretend Play	.545**	-	.680**	.457*
Affective Pretend Play	.522**	.680**	-	.290*
Pretend Actions Task	.439*	.457*	.290*	-

**p<0.001; *p<0.01

Since a number of positive relationships were found between all domains, a multiple regression analysis was conducted to examine the extent of the relationship between each pretend play domain and receptive language. Prior to analysis, distribution and multicollinearity were assessed to ensure that regression assumptions were met (Pallant, 2013). The distribution was not problematic for the multiple regressions, and the data did not show multicollinearity (see Data Screening File on CD for output).

Table 3: Results of a standard multiple linear regression predicting receptive language from pretend play scores (N=43)

Predictor	B	SE B	Beta	t	p
Constant	31.058	1.990		15.608	.000
Cognitive pretend play	.463	.336	.233	1.267	.212
Affective pretend play	1.005	.590	.291	1.704	.096
Pretend actions task	.829	.472	.248	1.756	.087

When cognitive pretend play, affective pretend play and pretend action task were entered together in a standard multiple regression, they were found to predict a significant amount of variance of 38.8 percent, adjusted to 34.1 percent, in receptive language scores, F (3, 43) = 8.23, p<0.001.

However, cognitive pretend play, affective pretend play and pretend action task were not significant unique predictors (see Table 3 for unstandardized and standardised coefficients, t-values and p-values).

In summary, together cognitive and affect pretend play and the pretend actions task significantly predicted 38.8 percent of the variance in receptive language, however none of these variables were significant unique predictors on their own.

Expressive Communication

A series of Spearman's rank one-tailed correlations were used to assess the relationship between expressive language, cognitive pretend play, affective pretend play and pretend actions task. Raw scores were used from each test. The means, standard deviations and correlations are reported in Table 4. As hypothesized, Table 4 shows that significant positive correlations were found between all measures across the three forms of pretend play and expressive communication.

Table 4: Mean overall scores and inter-correlations between expressive language, cognitive pretend play, affective pretend play and pretend actions task (N=41)

	Expressive Language	Cognitive Pretend Play	Affective Pretend Play	Pretend Actions Task
Mean	38.17	6.53	4.24	1.14
Standard Deviation	4.91	2.01	1.18	1.20
Expressive Language	-	.508**	.452**	.582**
Cognitive Pretend Play	.508**	-	.694**	.523**
Affective Pretend Play	.452*	.694**	-	.341*
Pretend Actions Task	.582**	.523**	.341*	-

***p*<0.001; **p*<0.01

A multiple regression analysis was conducted to examine the extent of the relationship between each pretend play domain and expressive language.

Table 5: Results of a standard multiple regression predicting expressive language from pretend play scores (N=41)

Predictor	B	SE B	Beta	t	p
Constant	30.57	2.371		12.762	.000
Cognitive pretend play	.325	.461	.132	.705	.485
Affective pretend play	.871	.704	.210	1.237	.223
Pretend actions task	1.818	.590	.441	3.081	.004

When cognitive pretend play, affective pretend play and pretend action task were entered together in a standard multiple regression, they were found to predict a significant amount of variance of 53.3 percent, adjusted to 49.5 percent, in expressive language scores, F (3, 41) = 9.369, p<0.001.

The Pretend actions task was the only significant unique predictor of expressive language (see Table 5 for unstandardized and standardised coefficients, t-values and p-values) with a standardised Beta coefficient of .441.

In summary, together cognitive and affect pretend play and the pretend actions task significantly predicted 53.3 percent of the variance in expressive language, however only the pretend actions task was a significant unique predictor of expressive communication.

The effects of age

Inspection of the mean scores (and standard deviations) from the three different age groups tested indicated that in all five domains the lowest scores were at age three, and the highest at age five (see Table 6).

Table 6: Mean overall scores and standard deviations of the different age groups

Age	Cognitive pretend play	Affective pretend play	Pretend Actions Task	Receptive Language	Expressive Language
3 (N=14)	5.29 (1.20)	3.71 (.91)	.43 (.85)	36.64 (3.65)	34.07 (3.29)
4 (N=18)	7.28 (2.05)	4.44 (1.20)	1.44 (115)	40.39 (3.05)	40.17 (4.33)
5 (N=8)	7.50 (1.70)	5.00 (.93)	1.88 (1.25)	42.25 (3.37)	41.63 (3.07)

Initially, due to the non-normal distribution of the data the non-parametric Kruskal Wallis test was used for each separate dependent variable which indicated similar results as the MANOVAs (see Kruskal Wallis results in data file). Non-parametric tests generally have less statistical power, and the Kruskal Wallis results would also require additional bonferoni corrections for Type 1 errors, which are problematic (Field, 2013). Since the overall significance did not differ, the MANOVA results are reported here.

A MANOVA was used to investigate age differences in pretend play and language. Five dependant variables were used: cognitive pretend play, affective pretend play, pretend actions task, receptive language, and expressive language. The independent variable was age: three, four and five years old. Preliminary assumption testing was conducted to check for normality, homogeneity of variance-covariance matrices and sphericity, with no serious violations noted. The results of the overall MANOVA model were statistically significant, F (5, 66) = 2.75, p <0.001; Wilks' Lambda = .50.

When the results for the dependant variables were considered individually, age has a statistical significant effect upon each of the dependant variables; cognitive pretend play, F (2, 37) = 6.52, p=.004; affective pretend play, F (2, 37) = 4.08, p=.025; pretend actions task, F (2, 37) = 5.64, p=.007; receptive language, F (2, 37) = 8.50, p= .001; expressive language, F (2, 37) = 14.14, p<0.001.

Finally, a series of post-hoc Tukey tests were performed to examine individual mean difference comparisons across all five domains. For cognitive pretend play, the results revealed that there was a significant difference between three and four year olds (p=.007), and three and five year olds (p=.017). However there was no significant difference between four and five year olds (p= .951). For affective pretend play, the results revealed that there

was a significant difference between three and five year olds (p=.025). However there was no significant difference between three and four year olds (p= .142) and four and five year olds (p= .439). For the pretend actions task, the results revealed that there was a significant difference between three and four year olds (p=.031), and three and five year olds (p=.012). However there was no significant difference between four and five year olds (p= .617).

For receptive language, the results revealed that there was a significant difference between three and four year olds (p=.009), and three and five year olds (p=.002). However there was no significant difference between four and five year olds (p= .396). For expressive language, the results revealed that there was a significant difference between three and four year olds (p<0.001), and three and five year olds (p<0.001). However there was no significant difference between four and five year olds (p= .637).

In summary, four year olds performed significantly better than three year olds in all domains except for affective pretend play. In all domains five year olds performed significantly better than three year olds. However, there were no significant differences between four year olds and five year olds for all five domains.

The effects of sex

Inspection of the mean scores (and standard deviations) from the two different sex groups tested indicated that the differences between male and females were only slight (see Table 7).

Table 7: Mean overall scores and standard deviations of the different sex groups

Sex	Cognitive pretend play	Affective pretend play	Pretend Actions Task	Receptive Language	Expressive Language
Female (N=20)	6.60 (2.11)	4.20 (1.28)	1.1 (1.21)	38.85 (4.75)	37.60 (5.34)
Male (N=20)	6.65 (1.84)	4.40 (.99)	1.25 (1.21)	40.05 (2.87)	39.05 (4.37)

A MANOVA was used to investigate sex differences in pretend play and language. Five dependant variables were used: cognitive pretend play, affective pretend play, pretend actions task, receptive language, and expressive language. The independent variable was sex, male or female. Preliminary assumption testing was conducted to check for normality, homogeneity of variance-covariance matrices and sphericity, with no serious violations noted. There was a non-significant difference between sex on the combined dependent variables, F (5, 24) = .291, p=.914; Wilks' Lambda = .959.

When the results for the dependant variables were considered individually, only receptive language reached statistical significance, F (1, 38) = 6.36, p= .016 with boys scoring significantly higher than girls. The other four domains showed no significant effects of sex; cognitive pretend play, F (1, 38) = .23, p=.633; affective pretend play, F (1, 38) = 4.45, p=.508; pretend actions task, F (1, 38) = .13, p=.721; expressive language, F (1, 38) = 1.72, p=.197.

In summary, boys scored significantly higher on the receptive language test. However, there were no significant differences regarding participant sex for any of the other dependent variables.

Discussion

The aim of the current study was to investigate the under-researched relationship between three types of pretend play (a) cognitive pretend play, (b) affective pretend play and (c) symbolic play skills and expressive and receptive language development. It also aimed to investigate whether age and sex had an effect on these variables. The findings are presented regarding the individual relationships between the pretend play domains and receptive and expressive language. Then the associations with age and pretend play and language are addressed, and finally the effect that sex has on pretend play and language development.

The relationship between pretend play and language

Receptive Language

This study found that cognitive and affective pretend play and symbolic play significantly predicted 38.8 percent of variance in receptive language when all three play variables were combined. This supported the first hypothesis, which was 'there will be positive relationships between the three play domains and receptive language'. This result is consistent with those reported by Sigman and Ungerer (1984) who found that pretend play was positively related to receptive language. However, cognitive and affective pretend play and symbolic play were not significant unique predictors; thereby the second part of the hypothesis was not supported. This suggests that the pretend play domains are still an important variable in receptive language development, but only as a whole and thus needs to be researched further.

When looking at the relationship between pretend play and receptive language, the current study supports what was already found by previous research studies. As discussed, the relationship between pretend play and receptive language has been found to be positively significant, which supports the current study's findings (Lewis, Boucher, Lupton, & Watson, 2000). However, the current study does not support the notion that individually, pretend play domains are significant predictors of receptive language. These findings do not support the longitudinal research of Lyytinen and colleagues (2001) who investigated delays in receptive language development. They found that pretend play at 14 months was predictive of receptive language at three years. Having said this, unlike the current study the children's pretend play skills were tested at 14 months, which may not reflect on their pretend play ability at three to five years. As previously discussed, pretend play develops along with the child (Vygotsky, 1967). Although pretend play was found to be a predictive factor at 14 months, Frahsek and colleagues (2010) failed to find a correlation between receptive language and pretend play at 24 or 30 months. The type of pretend play evolves with the child; therefore the current study suggests that children's pretend play skills at age three to five do not predict their receptive language.

The results from the multiple regression did not show that one type of play was more important than another. This goes against Russ (2004, cited in Fehr & Russ, 2016) who believed that cognitive and affective processes are the most important aspects of pretend play, which would suggest that they should be present in language development. Cognitive and affective processes of pretend play are important in the development of creative imagination (Kaugers & Russ, 2009). Therefore, the interlink with language development has similarities which have been found between the two. For example,

narrative re-telling abilities is an aspect of language development which involves a creative imagination (Stagnitti & Lewis, 2015). With both processes of pretend play and language involving creativity, it could be argued that they are related, as found in the results of the regression model, but not predictive of receptive language. However, a quantitative study conducted by Frahsek and colleagues (2010) found no correlation between receptive language and pretend play performance in 24 to 30 month old children. As DeLoach (2000) suggested, it may be the case that the children did not yet understand the dual representational nature of play objects. In other words, when children are asked about an object, they would refer to it as the real thing, rather than what they are pretending it to be. According to DeLoach (2000) this could affect their understanding of language. Therefore the findings from the multiple regression could suggest that the children may have applied dual representation when they were asked to use the blocks as part of their play. They would refer to them as blocks, rather than using elements of pretence, which supports Frahsek and colleagues' (2010) findings.

An alternative explanation for the non-significant results could be that rather than the different domains predicting language, language is a predictor of pretend play. Kirkham, Stewart and Kidd (2013) proposed that over time language predicts pretend play behaviour. Previous research suggests that by the time the child is five years old language becomes internalized (Winsler & Naglieri, 2003). These findings support Vygotsky's theory (1962) which stated that language has the dominating role within structuring and mediating the development of representational skills which are seen in pretend play. Kirkham and colleagues (2013) found that pretend play did not predict children's linguistic abilities at age five. They claim that this is because at that age language proceeds and

structures the development of pretend play skills. This provides an alternative explanation as to why the different domains of pretend play were not found to uniquely predict receptive language development. Moreover, Kirkham and colleagues' (2013) findings show that initially pretend play and language develop alongside each other, which could explain the findings of Lyytinen and colleagues (2001) given that they investigated 14 month old infants.

The inconsistencies within the literature suggest that more research into the relationship of pretend play and receptive language specifically, needs to be done. In particular, cross-sectional research would be beneficial because researchers would be able to compare the development of these variables in order to understand their relationship. This would help gain a greater understanding of the relationship that cognitive and affective pretend play and symbolic play skills have on a child's understanding of language.

Expressive Language

The second element of language development the author looked at was expressive language. The results showed that the three pretend play domains, cognitive, affective and symbolic play, all significantly contributed to 53.3 per cent of variance in expressive language. This supports the first hypothesis that there will be positive relationships between the three play domains and expressive language. The relations between the three independent variables were then examined to find that only symbolic play was a significant unique predictor of expressive language.

As discussed earlier, symbolic play has been found to assist in the development of language as pretend play and language skills both involve symbolising abilities (Copper, 2012; Lewis, Boucher, Lupton, & Watson, 2000; Udwin & Yule, 1982). This supports the

initial findings of the current study as symbolic play was a positive unique predictor of expressive language development. These findings could be explained by Lewis and colleagues' (2000) theory that pretend play and language development requires conceptual knowledge and the ability to symbolize.

Zimmerman and colleagues (1997) refer to expressive language as the social communication and vocal development of the child and since children's pretend play is an important aspect of social interactions, Vygotsky (1962) believed that pretend play could be understood as a facilitator of language development. However, with pretend play being a social activity, it would be expected that all three domains would uniquely predict expressive language. Howes and Matheson (1992) propounded that children develop complex social pretend play skills as they go through stages of simple social play to cooperative social pretend play. They found that between three and five years old, children increase the amount of complex social pretend play. When children engaged in this form of pretend play they had to communicate their roles as they plan and maintain the play (Howes & Matheson, 1992). With this study and the current study having the same age group sample, Howes and Matheson's (1992) results contradicts the findings of the current study because cognitive and affective pretend play did not uniquely predict expressive language. However, the current study did not investigate the role of social pretend play. The children were asked to play individually. Lillard and colleagues (2013) found in their meta-analysis that social pretend play involves greater social skills, which suggests that pretend play could have predicted expressive language if social pretend play was examined.

In the current study, cognitive and affective pretend play was not found to be unique predictors of expressive language. One possible explanation for this could be that other factors may impact the development of play and language. In particular, it has been found that the home environment can affect the child's development (Sénéchal, Lefevre, Thomas & Daley, 1998). Vygotsky (1962) argued that children learn through experience. Therefore, a child's experience of language in the home could have an impact on their language development. Robertson and Reese (2017) found that when parents used predictions and inferences within their storytelling, the child's language skills were significantly higher. The quality of shared book reading has also been found to be an important factor in developing language (Sénéchal, Lefevre, Thomas & Daley, 1998). Therefore, the associations found between home literacy experiences could affect children's language skills which suggest an alternative explanation for cognitive and affective pretend play not being unique predictors of expressive language.

Another possible explanation could be the nature of the study. According to O'Connor (2014), play is only considered playful by the child if they are actively engaged in the activity. Yet, in the current study children were asked to play with puppets in an environment with an adult present. Therefore, the scores from the APS-BR test would not show the child's true playfulness, which could explain the lack of significance for cognitive and affective pretend play to be unique predictors (O'Connor, 2014). Children might not have demonstrated their true playfulness because they may have been embarrassed to perform in front of the researcher. Although a 15 minute period of free-play was conducted prior to testing, the children may not have felt confident to fully engage in their true playfulness behaviour, thereby resulting in observer effects.

In Howes and Matheson's (1992) study, they used observational techniques to understand the development of social pretend play. Therefore, the current study could have adapted the use of observations of play in a naturalistic free play context, rather than standardised tasks to assess the relationship between pretend play and language development. However, to date the APS-BR is the only study known to the author which investigates cognitive and affective pretend play processes separately. Even though this measure was found to have high internal consistency and construct validity (Fehr & Russ, 2016), it would be beneficial to observe play in a naturalistic free play environment which also investigates cognitive and affective pretend play skills. However, observations are more time consuming than standardised tests. For example, if children are given the choice over what they play and who they play with during an experiment, they may not necessarily choose to engage in pretend play.

Having said this, Lewis and colleagues (2000) found a positive relationship between solitary pretend play and expressive and receptive language. With solitary pretend play being a form of independent play, and not social play, it would suggest that there is still an expectation that the cognitive and affective pretend play should still predict expressive language with it being tested by the APS-BR. Yet, the current study does not support the idea that pretend play in general, whether being social or solitary, predicts expressive language, only symbolic play is a unique predictor. This may be due to the simplicity of the task which assesses a more basic symbolic nature compared to the APS-BR which requires five minutes of playing.

The current study only found symbolic play to be a unique predictor of expressive language skills, and not receptive skills, which supports the findings of Stanley and

Konstantareas (2007). In their study of language delays in children with Autism, they found that expressive language skills were highly associated with higher levels of symbolic play. Since both expressive language and symbolic play require the generation of words or actions which the child does independently, it is no surprise that symbolic play is a strong unique predictor of expressive language (Stanley & Konstantareas, 2007).

However, cognitive and affective pretend play not being unique predictors of expressive language could be explained by the two domains being highly inter-correlated with each other, as found during the initial correlations between the two variables. There is limited research into the two domains uniquely predicting expressive language, which could suggest that they only contribute to expressive language when they are combined together, and not individually, which would support the current findings. However, it is important that further research is conducted in this area to gain a better understanding of the role of cognitive and affective pretend play.

The effects of age and pretend play

The second issue the author investigated was whether age had an effect on pretend play. The MANOVA results indicate that age positively effects cognitive and affective pretend play, and symbolic play. Children received significantly higher pretend play scores at five years than at age three, which supports the second hypothesis which was 'there will be a difference according to age on the three types of play'. Overall, this finding is consistent with previous research which demonstrates that the level of pretend play increases as the child gets older (Brėdikytė, Brandišauskienė & Sujetaitė-Volungevičienė, 2015).

Looking first at cognitive and affective pretend play, the post hoc tests revealed that children express more affect and better quality of pretend play at age five compared to ages three and four. Although the effects between age four and five and cognitive pretend play in this study were not significant. These results are consistence with those reported by Brėdikytė and colleagues' (2015). They grouped four and five year olds together and found that they produced the highest level of cognitive pretend play, by organising the play and assuming roles and keeping to the rules of their roles. This suggests that there is no difference between four and five year olds because when they are combined they have similar cognitive processes of pretend play. This supports the current study finding that there was no significant difference between the ages of four and five.

Affective processes are the child's emotional expression within the story of pretend play (Russ, 2004, cited in Fehr & Russ, 2016). In the current study affective processes of pretend play were found to be significantly higher in children aged five than aged three. This supports Brėdikytė and colleagues' (2015) theory that the level of pretend play increases with age. They found that children aged eighteen months to three years old communicated less with their play partner. If a child does not communicate, they are less likely to show signs of emotional expression, which supports the current study's findings that at age three children's affective pretend play is lower than at age five. In addition, Hoffmann and Russ (2012) claim that expressive emotions develops through pretend play, as they found that children who had more affective expressions during play were rated as having a better emotional regulation. Therefore, as the pretend play develops, the child will develop affective processes which support the current study's findings.

The results of the current study showed that there was a significant difference in symbolic ability between three and four year olds and three and five year old children, but not between the age of four and five. This finding is consistent with Vygotsky's (1967) theory of symbolic play. Vygotsky propounded that children use object substitution which develops into playing without any object present and using abstract thought. With this being a complex act of symbolic play (Carlson, White & David-Unger, 2014) it is no surprise that older children performed more symbolic actions in the current study. This is also consistent with previous research by Elder and Pederson (1978) who found that when the meaning of an object was understood, the child was able to perform a task with the absence of the object. More recently Brėdikytė and colleagues (2015) also supports these findings as they found that children age eighteen months to three years used mainly real objects with their intended purpose.

However, the current results do not support the research conducted by Overton and Jackson (1973) who also used the pretend actions task. They found that both three and four year olds would use a body part to represent an absent object, rather than symbolically representing it. The current study found significant differences between three and four year olds which contradict Overton and Jackson's (1973) research. Their study suggests that children's ability to pretend play at age five is similar to the ability at age four, which does not support this study's hypothesis. It was expected that children's ability to pretend play would increase with age. If older children symbolically represent a missing object, then a significant difference would be expected between four and five year olds.

Research in this area is very important as the role and importance of play is being increasingly challenged by teachers and other educational bodies (Daly, 2014). As the

literature reviewed in this paper has shown, pretend play is integral to children's development, especially with regards to their language development as it allows children to explore their environments and form relationships with other children (Melzer & Palermo, 2015). Thus, providing another possible explanation for the current studies results. Schools are becoming more focused on academic performance rather than the social development of the children, as they start to lack the opportunities to learn through play and explore their surroundings (O'Connor, 2014). Through an analysis of the literature, Kim (2018) found that educational trends have shifted the focus to academic aspects of the curricula which have resulted in a decrease in the amount of play in the pre-school classroom. The current study found no significant differences between four and five year olds in any of the three play tasks. Since this study only reported the ages of the children, it resulted in a mixed sample of four year olds from pre-school and reception which could explain why there was no significant difference because of the different learning environments.

Elkonin (2005) expanded Vygotsky's views on the nature of play by introducing the idea of mature play. This type of play was viewed as a source of development in early childhood as it was a more advanced form of play which involves playing with an absent object, such as eating imaginary food off an imaginary plate. However, research suggests that mature play no longer dominates child development (Bodrova, Germeroth & Leong, 2013; Miller & Almon, 2009). Bodrova, Germeroth and Leong (2013) suggested that children now show more signs of immature play. Children aged five and six have reverted back to only playing with realistic props, act out stereotypical play scenarios and demonstrate a limited amount of themes and roles which are typical in pre-school children

(Miller & Almon, 2009). According to Vygotsky (1962) children require guidance from a knowledgeable other in order to learn and promote cognitive growth. Bodrova and colleagues (2013) propound that teachers do not provide as much support for play as they should. Even when children play at a higher level during the beginning of the year, they were found to revert back to less mature play by the end of the school year (Bodrova, Germeroth & Leong, 2013). If this is the case, then it could explain the lack of differences between the older age groups and their ability to pretend play, because rather than increasing to mature levels of play after pre-school, their ability to pretend play may stay relatively constant. This demonstrates how crucial it is for teachers to understand the importance of play in the classroom.

The effects of age upon language development

The results of the MANOVA suggest that age does have an effect on language development. Language plays a crucial role in the developing child as it allows the child to interact with others (Brooks & Kempe, 2012). The current study's findings indicate that there is a significant difference between three and four year olds and three and five year olds in both the expressive and receptive language tests. This supports the second hypothesis that 'there will be a difference according to age on the two types of language skills'. However, no significant differences were found between four and five year olds.

The current findings support the notion that the more conversational experience a child gets with age, the greater their brain development will be (Romeo, et al, 2018). Romeo and colleagues (2018) propounded that as the brain matures with age, so does the child's cognitive language processes. They found that if a child is exposed to language early

on in life, it affects their linguistic skills in later life (Romeo, et al, 2018). This suggests that as children gets older, their receptive and expressive language also improves. This supports the current research findings as the older children scored significantly higher in both language tests than the younger children.

Having said this, previous research does not support the current study's findings of no significant difference between four and five year olds. This finding contradicts Romeo and colleagues' (2018) theory that as the brain matures with age, the child's language skills also improves. It is expected that between these age groups, children would gain more conversational experience, which should affect their language development (Romeo, et al, 2018). However, the children in the current study did not demonstrate signs of more conversational experience as there was a lack of differences between four and five year olds. When children enter the school system, it is expected that they would gain more conversational experience, yet in the current study this does not seem to be the case. Therefore, there could be an alternative explanation for the current study finding no difference between expressive and receptive language development in four and five year olds.

The current view of play among many adults, according to Bodrova and colleagues (2013) is that children only require the time, space and props in order to engage in play on their own. However, Vygotsky (1962) propounded that the zone of proximal development requires scaffolding from an adult in order for the child to fully develop adequate language skills. In order to overcome this, Bodrova, Germeroth and Leong (2013) developed the Mature Play Observation Tool to address specific behaviours and components that define mature pretend play. This instrument includes both teacher and child dimensions which

has been found to effectively measure play after taking social context into account. Future research could benefit from investigating the effects that teachers have on children's language development by using this assessment tool. Hopefully, it would enable a greater understanding to the role the school environment plays in children's play development, and also the effects that it would have on their language development.

The effects of sex

The final issue that the author investigated was whether sex had an effect on pretend play and language development. The MANOVA results indicate that there are no significant sex differences for any of the pretend play tests. The results found that in the receptive language test only, boys scored significantly higher than girls, however no significant differences were found for the expressive language test. Overall, these findings do not support the third hypothesis that girls would perform significantly better than boys.

The current findings do not support the empirical research conducted by Brėdikytė and colleagues (2015). They found that girls were more likely to engage in abstract thinking and have higher levels of pretend play by keeping to the role they adopted. Since complex forms of pretend play have been found to produce higher levels of language ability (Melzer & Palermo, 2016), girls were expected to perform better than boys. Yet, the results from the current study found that sex does not affect pretend play or language abilities. Having said this, the current study was investigating the effects of sex on cognitive and affective process of pretend play, not complex forms of pretend play. The Affect in Play Scale does not assess the child's ability to adopt a role and keep to the rules of that role like in Brėdikytė and colleagues' (2015) study. Their study involved presenting a questionnaire to

teachers who would observe and evaluate children's' free play activities, with focus on the objects they use for play and the child's position in play. Therefore, the difference in measures could be a possible explanation in the differences of results. The author suggests that although pretend play is more favourable in girls than boys (Li, Hestenes & Wang, 2014), when their cognitive and affective processes are tested, there are no sex differences. If the current study investigated complex forms of pretend play, sex differences may have been found. Future research could investigate whether there is a difference in complex forms of pretend play and whether they have an impact on expressive and receptive language development.

In addition, Li, Hestenes and Wang (2014) found that in pre-school girls tend to use their imagination to represent objects, whereas boys would use object substitution. With girls using a more symbolic method of play, it would be expected that they would score higher on the Pretend Actions Task than boys. However, the task is quite simplistic which suggests that girls may not fully apply their imagination to represent objects when asked to pretend to cut paper with some scissors. This simplicity may be accountable for how sex might influence symbolic play. Having said this Brėdikytė and colleagues (2015) did not find statistical significant differences between how girls and boys utilised play objects. This finding supports the current study.

Moreover, the current study did find that boys scored significantly higher on the receptive language test than girls. This finding does not support the third hypothesis. It also does not support previous findings that girls usually perform better in language tasks (Eriksson, et al, 2012). Yet, the majority of past research has reported that there are sex differences up to 36 months, and usually boys tend to catch up to girls by the time they are

three years old (Simonsen, Kristoffersen, Bleses, Wehberg, & Jørgensen, 2014). Therefore, girls may advance in their vocabulary skills during infancy, but the sex differences are not consistent throughout childhood. Since the current study used a sample of children over the age of three, it could be argued that other factors may contribute to the differences in receptive language skills.

Although many psychologists argue that pretend play contributes to the language development of a child (Lewis, Boucher, Lupton, & Watson, 2000; Lyytinen, Poikkeus, Laakso, Eklund & Lyytinen, 2001; Nicolich, 1975; Yawkey, 1983), it may not be the only contributor. The sex differences in language may also be attributed to a wide variety of other factors such as neurological differences. Burman, Bitan and Booth (2008) identified that there were sex differences in brain activation. The found that boys rely on different brain areas for accurate performance during language tasks. Although they found that girls performed better on language tests which required the left fusiform region, boys were found to use the left inferior frontal area which was correlated with auditory word tasks, suggesting that boys were more accurate in auditory word tasks (Burman, Bitan & Booth, 2008). This supports the current study, as boys performed better in the receptive language test, which is a test of auditory comprehension.

In addition, family social economic status (SES) may also contribute to the differences in language development. Previous research has argued that family SES is a highly significant predictor of language development (Barbu, et al, 2015; Hoff, 2003; Rowe, 2012). Barbu and colleagues (2015) propounds that since there are developmental outcomes of SES, it is important to understand the sex differences across the socioeconomic strata, and how they can affect language development. They argue that the

sex differences in language are not sufficiently large, since many researchers have found that sex explains a small amount of variance (Galsworthy, Dionne, Dale & Plomin, 2001; Reilly et al., 2007). This suggests that sex cannot fully explain the differences within language development. Barbu and colleagues' (2015) findings suggest that the child's sex alone does not contribute significantly to language development, but instead when it is considered in relation to family SES. There were sex differences in low-SES outcomes, but not high-SES (Barbu, et al, 2015). This could explain the current study finding no significant differences in expressive language development. Although the family SES was not noted, it could be assumed, due to these results and previous findings that SES could have contributed to language development. Therefore, pretend play may be a predictor of language development, as the current study found, but it does not necessarily mean it is the only predictor.

Limitations

The present study used methods which can be critiqued. The Affect in Play Scale involved tasks which were initiated by the researcher. Although the researcher took time before testing to get to know the children, the child needs to be actively engaged in the activity in order for them to consider it playful (O'Connor, 2014). Research has shown that child-initiated play creates higher levels of play complexity (Melzer & Palermo, 2016). Melzer and Palermo (2016) examined pretend play with mothers and found that children who initiated the pretend play first were found to have higher levels of complex play which was positively related to cognitive language. However, if the parents initiated the play the child had lower levels of play complexity. These results suggest that guided participation

during play enhances independence and play complexity, but when parent's control the play, the child's complexity is reduced (Melzer & Palermo, 2016). With the researcher asking the child to play with the puppets, this initiation could have resulted in lower levels of play complexity during the experiment. This study could have overcome this by using observational methods, such as the Test of Pretend Play used in Lewis and colleagues' (2000) study. Although it does not specifically measure cognitive and affective processes of pretend play, Lewis and colleagues claim that it provides the most accurate data on testing pretend play abilities, which could have been used to create a naturalistic observation which would be more ecologically valid.

Furthermore, the current study failed to find a positive relationship between four and five year old children on any of the three pretend play measures. As mentioned earlier, this could have been due to mature play no longer dominating child development (Bodrova, Germeroth & Leong, 2013; Miller & Almon, 2009). Yet, the current study does not particularly measure the complex forms of pretend play, like mature play Elkonin (2005) proposed. Researchers have found that throughout the pre-school years pretend play is becoming more abstract (Carlson, White & David-Unger, 2014). Then why did the current study not find significant differences between four and five year olds? One explanation could be the measures used. If the current study assessed complex forms of pretend play, it would have been able to truly understand the age development of pretend play. One such measure could have been testing whether the child engages in imaginary companion play, which is an advanced form of pretend play (Trionfi & Reese, 2009). Research shows that imaginary companion play is related to more advance narrative skills. Through narrative and language assessments of children aged five and a

half, Trionfi and Reese (2009) concluded that children who engaged in imaginary companion play told richer stories. Since imaginary companion play promotes cognitive development and is claimed to be a highly detailed form of pretend play, it is an important concept to understand the development of pretend play. Future research could examine whether this type of play is also present in three and four year olds, and also investigate whether it is a predictor of language development in these age groups.

In addition, advanced forms of language development could have also been used to assess the effects that age has on language. Oral narrative skills are used throughout the literature of language development and pretend play. Pellegrini and Galda (1982) proposed that pretend play and oral language share attributes of cohesive texts, where they do not rely on a physical setting. When children use object substitution during play they have to communicate with one another to talk about what the object stands for and represents. Moreover, Stagnitti and Lewis (2015) conducted a follow-up study with six to eight year olds to investigate whether their pretend play skills in preschool was related to their narrative re-telling abilities in early primary years. They found that there was a significant correlation between pretend play and narrative scores. When children used symbols during play, it had a stronger relationship with narrative re-telling abilities, especially when their ability to substitute objects was higher (Stagnitti & Lewis, 2015). This study assessed the child's ability to self-initiate pretend play by using the Child-Initiated Pretend Play Assessment (Stagnitti, 2007). It also used the School Age Oral Language Assessment to assess their oral language skills (Allen, Leitao & Donovan, 1993). This measure provides an alternative approach to the current study, and suggests that assessing the child's oral

narrative skills would be useful to understand the complex forms of language development.

An additional critique of the present investigation concerns experimenter bias. According to Lillard and colleagues (2013), it is important that the experimenters are 'masked' so that they are not aware of the aim of the investigation. In their meta-analysis, they found numerous researchers that did not use masked experimenters. Future research would benefit from having masked experimenters. Besides the present researcher not being masked, there is another limitation with the current study. With regards to the Pretend Actions Task, the participants required to perform certain tasks, one being to pretend to drink out of a cup. Due to the shape of a cup, it was difficult to differentiate between whether the child was using a body part or an imaginary object. The use of imaginary objects is a complex form of symbolic play (Carlson, White & David-Unger, 2014). Since the children depend on their imagination throughout play, this particular task was difficult to assess whether they were using their imagination or not.

Furthermore, the present study extends the current knowledge on the effects of pretend play on language development by investigating the effects on British children. Although Lewis and colleagues (2000) researched pretend play and language using the Pre-school Language Scale in England, numerous studies have been conducted in many different countries (Brėdikytė, Brandišauskienė, & Sujetaitė-Volungevičienė, 2015; Frahsek, Mack, Mack, Pfalz-Blezinger, & Knopf, 2010; Howe, Abuhatoum, & Chang-Kredl, 2014; Melzer & Palermo, 2016). These studies all assess whether pretend play predicts language development. This supports hypothesis one, and provides additional insight into the relationship between pretend play and language development in British children.

Practical Implications

This study extends current research into the effects of cognitive and affective aspect of pretend play and symbolic play on receptive and expressive language. With this study demonstrating the importance of pretend play on language development, it provides a strong basis for future studies to expand and develop on. It is clear that research into the cognitive and affective aspects of pretend play is very much under researched, specifically in relation to language development, and this study provides an additional insight on how age and sex can affect these five domains.

Further research could investigate whether there are any other contributors to expressive and receptive language. With research already conducted on both these domains and pretend play (Lewis, Boucher, Lupton, Watson, 2000), it is important that future studies assess whether there are any alternative explanations. Nevertheless, this study shows that pretend play is still a crucial aspect of child development. It is important to educate the schools and educational practitioners and policy makers on the positive effects that pretend play has. The author believes that by doing this, it will educate teachers on the importance of play in the Early Years classroom, but also beyond into Key Stage One. With the education system understanding this better, they will be able to help incorporate play into all forms of learning. Teachers will be able to understand their role as a knowledgeable other in influencing children's play skills (Vygotsky, 1962). With this understanding they will be able to encourage child-initiated play in the hope that it will enable further development (Melzer & Palermo, 2016).

In addition to teachers, the importance of play should also be acknowledged by parents. If parents understand the importance of free play opportunities, then according to previous research, their child's development should improve. Although Warash and colleagues (2017) found that parents do value play, it is important that they understand what effects there are from initiating play with a child, like in the study by Melzer and Palermo (2016). Warash and colleagues (2017) found that some mothers actively chose a pre-school that also valued play; however their view of play altered as they approached formal schooling. However, research suggests that the importance of play does not disappear after pre-school, and in reception it is a crucial age of development (Piaget 1962, cited in McCune-Nicolich, 1981). By understanding the decrease of mature pretend play, parents will be able to encourage play in their child's life beyond pre-school. Therefore, it is important that parents value play throughout childhood.

It is also possible that pretend play training could be put in place for those who have lower levels of language skills. Conner and colleagues (2014) believed that interventions help children to develop complex play skills which were found to result in higher levels of language skills. They conducted their own play and language interventions which lasted over a four week period. Although this type of intervention goes against what research has shown about the importance of child-initiated play (Melzer & Palermo, 2016), it still provides an important contribution for further research.

An alternative intervention which could be used to improve language skills is play therapy. Danger and Landreth (2005) used child-centred group play therapy to investigate whether it improved specific speech problems in the area of receptive and expressive language. These children received 25 group therapy sessions which lasted 30 minutes

each. The results suggest that play therapy is an effective intervention strategy for children with language impairments as it helps them to improve their expressive and receptive language. However, the tests used to measure this are dated and based on verbal ability estimates and parent and teacher's rating the child's communication; the Peabody Picture Vocabulary Test – Revised (Dunn & Dunn, 1959) and the Clinical Evaluation of Language Fundamentals (Semel, Wiig, & Secord, 1996). Play therapy could be a useful intervention to help increase language skills in children who experience language delays, but more reliable and valid research would be beneficial to the understanding of play interventions on language.

Conclusion

To conclude, data from this investigation partially supports the hypotheses and suggests that pretend play predicts language development. The findings suggest that cognitive and affective aspects of pretend play and symbolic play are not unique predictors of expressive and receptive language; it was found only that symbolic play was a statistically significant unique predictor of expressive language. The findings also suggest that age does affect pretend play and language skills. The sex of the child had no effect on these domains; apart from boys performing better than girls in the receptive language test. This study addresses gaps in the literature in the understanding of the importance of investigating the different aspects of pretend play separately. Although the results were not significant, they contribute to the understanding of the role pretend play has on language development. These findings have important implications for more research into cognitive and affective processes of pretend play and language development.

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Appendix A – example questions

4 – 0 to 4 – 5 (48 to 53 months)

Auditory Comprehension

33. Understands spatial concepts
Materials: Brick, Teddy
Place the brick on the table. **"Put the brick … Teddy."**
a. **under** ___ b. **behind**___ c. **next to** ___ d. **in front of** ___
(Pass: Three correct)

34. Compares animals
Materials: *Picture Manual,* p. 28
"Which one has …?" a. **the longest nose** ___
b. **a long, thin tail** ___ c. **a bushy tail** ___ d. **pointed ears** ___

35. Understands complex instructions
Materials: *Picture Manual,* p. 29
a. **"Point to a kitten that is not black."**
b. **"Point to the white kitten that is sleeping."** ___
c. **"Point to the small black kitten in the box."** ___
d. **"Point to the kitten with black ears and a white face."** ___
(Pass: Three correct)

36. Identifies pictures
Materials: *Picture Manual,* pp, 30–32
"Show me the ...."
a. **parachute** ___ b. **wheelbarrow** ___ c. **stamp** ___
(Pass: Two correct)

Expressive Communication

33. *Uses prepositions
Materials: Teddy
"Tell me where Teddy is." Place Teddy …
a. on the chair ___ b. behind the chair ___
c. next to the chair ___ d. in front of the chair ___
(Pass: Two correct)

34. Repeats irregular and regular forms of past tense
"Say this back to me." a. **"James *ran* fast and *won* the race."** ___
b. **"Annie *fell* and *dropped* her milk."** ___
c. **"George *listened* to the radio and *danced*."** ___
(Pass: Two correct)

35. Describes a procedure
a. **"Tell me how to make a sandwich."**
b. **"Tell me what you do when you get dressed in the morning."** ___
(Pass: One correct)

36. Name members of the category 'animals'
Materials: *Stopwatch*
"Name all the animals you can think of until I tell you to stop." ___
Write the responses produced within one minute below:
(Pass: Names at least six animals)

4 – 6 to 4 – 11 (54 to 59 months)

37. Understands descriptive concepts
Materials: *Picture Manual,* pp. 33–35
a. **"Can you see the paper chains? Point to the one that is long."** ___
b. **"Look at their hair. Whose hair is curly?"** ___
c. **"Look at the children. Point to the one who is short."** ___
(Pass: Two correct)

38. Understands time concepts
Materials: *Picture Manual,* p. 36
a. **"Which pictures show *night*?"** ___
(If the child points to only one appropriate picture, say "Any more?")
b. **"Which pictures show *day*?"** ___
(If the child points to only one appropriate picture, do not prompt)
(Pass: Two correct)

39. Understands quantity concepts
Materials: *Picture Manual,* pp. 37–8
a. **"Count the fish. Which fish-tank has three fish?"**
b. **"Count the strawberries on the plates. Which plate has five?"** ___
(Pass: Two correct)

40. Understands passive voice sentences
Materials: *Picture Manual,* pp. 39–40
"Show me ...."
a. **"Grandad was kissed by the baby."**
b. **"The dog was chased by the goat."** ___
(Pass: Two correct)

37. Defines words
"Tell me what a … is."
a. **fork** _____
b. **car** _____
c. **shoe** _____
(Pass: Two correct)

38. Repeats complex sentences
"Say this back to me."
a. **"Bob washed the dishes, then watched TV."**
b. **"The boy who has red hair is my neighbour."** ___
c. **"Mum is reading the newspaper and Dad is sleeping in the chair."** ___
(Pass: One correct)

39. Names categories
"Listen: dog, cat, horse, pig, goat—these are all *animals*.
Tell me what these are."
a. **"Lego, doll, ball, puzzle—these are all ...."**
b. **"Hat, shirt, dress, shorts, jeans—these are all ...."** ___
c. **"Beefburgers, cereal, oranges, mashed potatoes, pizza—these are all ...."** ___
(Pass: Two correct)

40. Responds to *why* questions by giving a reason
a. **"Why do you brush your teeth?"**
b. **"Why do you wear shoes?"**
c. **"Why do you keep ice-cream in the freezer?"**

This picture related to the AC question 37c, 'Look at the children. Point to the one who is short'.

Appendix B – scoring sheet

PLS-3 (UK)

PRESCHOOL LANGUAGE SCALE-3(UK)

Name _____ Address _____

Age _____ Gender F ___ M ___ School _____

Teacher _____ Examiner _____

	Day	Month	Year
Date of Test			
Date of Birth			
Chronological Age			

RAW SCORE CALCULATION		NORM-REFERENCED SCORES					
		Standard Score (SS)	SS Confidence Interval (__% level)	Percentile Rank (PR)	PRs for SS Confidence Interval values	Age Equivalents	Age Equivalent Confidence Interval
Auditory Comprehension — last AC task administered							
Minus number of 0 scores	-		to		to		to
AC RAW SCORE							
Expressive Communication — last EC task administered							
Minus number of 0 scores	-						
EC RAW SCORE			to		to		to
Total Language Score — AC Standard Score							
plus EC Standard Score	+						
STANDARD SCORE TOTAL			to		to		to
AC Raw Score + EC Raw Score							

Supplementary Measures

Articulation Screener ☐ indicates performance typical of age-peers
Raw Score _____ ☐ may indicate need for further evaluation
☐ strongly indicates need for further evaluation

Language Sample Checklist ☐ reinforces information obtained on PLS-3 (UK)
☐ differs greatly from information obtained on PLS-3 (UK)

Background Information Form ☐ reinforces information obtained on PLS-3 (UK)
☐ differs greatly from information obtained on PLS-3 (UK)

Other test scores/relevant data

Standard Scores	AC Score	EC Score	Total Score	Standard Scores
150				150
145				145
+3SD	140			140
135				135
130				130
+2SD	125			125
120				120
115				115
110				110
105				105
100				100
Mean				
95				95
90				90
85				85
80				80
-1SD				
75				75
70				70
-2SD				
65				65
60				60
55				55
-3SD				
50				50

See Chapter 5 in the *Examiner's Manual* to determine whether the difference between AC and EC scores is significant.

Harcourt Assessment

Appendix C – Puppets and blocks used in APS - BR

Appendix D - Instructions for APS-BR

I'm here to learn about how children play. I have here two puppets and would like you to play with them any way you like for five minutes. For example, you can have the puppets do something together. I also have some blocks that you can use. Be sure to have the puppets talk out loud. I'll tell you when to stop.

When there is one minute left to play, the child is told, "You have one minute left."

Appendix E – APS-BR scoring card

The Affect in Play Scale – Brief Rating Version (APS-BR) **Participant No.**

Cognitive Aspects
Organization (the quality of the plot and story complexity)
1 = raging from a series of unrelated, disjointed events with no cause and effect
4 = integrated plot with a beginning, middle and end

Imagination (the novelty and uniqueness of the play as well as the child's ability to use pretend and fantasy)
1 = no symbolism, transformations, or fantasy
4 = many transformations, novel fantasy events, and the addition of other characters or unusual plot twists

Comfort of play (the overall ability to play and the level of immersion in the play)
1 = distressed, and stopping and starting throughout the play
4 = being comfortable, involved, and enjoying the play

Affective aspects
Scored by the tone is based on the estimated amount of positive and negative affect units
1 = predominantly negative affect dominating the play
4 = predominately positive affect dominating the play

The frequency and tone of the affective expressions

1 = 1-3 affect units

4 = <15 affect units

Appendix F – Pretend Actions Task scoring card **Participant No.**

The self-directed actions are:

	Used a body part = 0	Use an imaginary object = 1
Pretend you are combing your hair		
Pretend you are drinking from a cup		
Pretend you are brushing your teeth		

Externally directed part of the task, children are presented with a wooden block and a piece of paper and will be requested to:

	Used a body part = 0	Use an imaginary object = 1
Pretend you are hammering this wooden block		
Pretend you are cutting this wooden block with a knife		
Pretend you are cutting this piece of paper with some scissors		

Appendix G – Ethics Application

Staff / Office Use Only ***DOPEC NUMBER:*** *Click here to enter text.* ***Umbrella project DOPEC number (staff)*** ***Click here to enter text.***

APPLICANT SURNAME Rebecca Nowell

APPLICANT:	**UG ☐**	**PGT ☐**	**PGR ☒**	**Staff ☐**
***REVIEW PROCESS*:**	**Accelerated ☐**	**Full ☒**		
APPLICATION STATUS:	**New application ☐**	**Major amendment ☐**	**Resubmission ☒**	
APPLICATION	**DissertationDissertation ☒**	**Teaching ☐**	**Research & publication ☐**	
***ATTTENDENCE AT HEALTH & SAFETY BRIEFING*:**	**Yes ☒**	**No ☐**	**N/A ☐**	
INCLUSION OF RISK ASSESSMENT FORM:	**Yes ☐**	**No ☐**	**N/A ☒**	

NOTES ON THE ROLE AND FUNCTION OF THE DEPARTMENT OF PSYCHOLOGY ETHICS COMMITTEE.

- *All decisions of the committee are based on the application form and reviewers comments ONLY. Forms should be as detailed and clear as possible. Verbal discussions are not considered as part of the application or review process.*
- *The review process strictly adheres to the University of Chester Research Governance Handbook and the BPS Code of Ethics.*
- *The decision of the committee is final. If you are a UG, PGT or PGR student you should discuss the decision of the committee with your supervisor. If you are a member of staff you may contact the chair of the committee for further clarification.*

Before completing the form researchers are expected to familiarise themselves with the regulatory codes and codes of conduct and ethics relevant to their areas of research, including those of relevant professional organisations and ensure that research which they propose is designed to comply with such codes.
Department of Psychology Ethical Approval for Research: Procedural Guidelines.
University of Chester Research Governance Handbook
http://ganymede2.chester.ac.uk/view.php?title_id=522471
BPS Code of Ethics
http://www.bps.org.uk/system/files/Public%20files/bps_code_of_ethics_2009.pdf
BPS Code of Human Research Ethics

http://www.bps.org.uk/sites/default/files/documents/code_of_human_research_ethics.pdf
BPS Guidelines for Internet-mediated Research
http://www.bps.org.uk/system/files/Public%20files/inf206-guidelines-for-internet-mediated-research.pdf
BPS Research Guidelines and Policy Documents
http://www.bps.org.uk/publications/policy-and-guidelines/research-guidelines-policy-documents/research-guidelines-poli

Any queries email: n.davies@chester.ac.uk or psychology_ethics@chester.ac.uk

CHECK LIST.
Please complete the form below indicating attached materials. Prior to submission supervisors must confirm that they have reviewed the application by completing the supervisors column.

Notes: Students to indicate where information is found, supervisor to confirm by ticking green column	**Supervisor confirmation**	**Information. sheet**	**Letter**	**Email**	**Email info. page**	**Consent Form**	**PowerPoint**	**N/A**
Brief details about the purpose of the study	☒	☒	☐	☐	☐	☐	☐	☐
Contact details for further information	☒	☒	☐	☐	☐	☐	☐	☐
Explanation of how and why participant has been chosen	☒	☒	☐	☐	☐	☐	☐	☐
Notification that materials/interviews are not diagnostic tools/therapy or used for staff review/development purposes	☒	☒	☐	☐	☐	☐	☐	☐
Explanation participation is voluntary	☒	☒	☐	☐	☐	☐	☐	☐
Details of any incentives or compensation	☒	☐	☐	☐	☐	☐	☐	☒
Details of how consent will be obtained	☒	☒	☐	☐	☐	☐	☐	☐
If research is observational, consent to being observed	☒	☐	☐	☐	☐	☐	☐	☒
Details of procedure so participants are informed about what to expect	☒	☒	☐	☐	☐	☐	☐	☐
Details of time commitments expected	☒	☒	☐	☐	☐	☐	☐	☐
Details of any stimuli used	☒	☐	☐	☐	☐	☐	☐	☒
Explanation of right to withdraw and right to withdraw procedure	☒	☒	☐	☐	☐	☐	☐	☐
Option for omitting questions participant does not wish to answer	☒	☐	☐	☐	☐	☐	☐	☒
Procedure regarding partially completed questionnaires or interviews	☒	☐	☐	☐	☐	☐	☐	☒
With interviews, information regarding time limit for withdrawal	☒	☐	☐	☐	☐	☐	☐	☒

Details of any advantages and benefits of taking part	☒	☐	☐	☐	☐	☐	☐	☒
Details of any disadvantages and risks of taking part	☒	☒	☐	☐	☐	☐	☐	☐
Information that data will be treated with full confidentiality and that, if published, those data will not be identifiable as theirs	☒	☒	☐	☐	☐	☐	☐	☐
Debriefing details	☒	☒	☐	☐	☐	☐	☐	☐
Dissemination information	☒	☒	☐	☐	☐	☐	☐	☐
Further information (relevant literature; support networks etc)	☒	☐	☐	☐	☐	☐	☐	☒

Supervisor Signature: ***Date :02/02/2018***

University of Chester

WHEN COMPLETING THE FORM PLEASE REFER TO THE DOP ETHICS PROCEDURAL GUIDELINES HANDBOOK.
UG AND PGT STUDENTS CAN ACCESS A COPY ON THEIR RELEVANT MOODLE PAGE.
PGR AND STAFF SHOULD CONTACT n.davies@chester.ac.uk or psychology_ethics@chester.ac.uk

1. Working title of the study

Notes: The title should be a single sentence

The relationship between pretend play skills and language development in children age three to five

2. Applicant name and contact details

Notes: The primary applicant is the name of the person who has overall responsibility for the study. Include their appointment or position held and their qualifications. For studies where students and/or research assistants will undertake the research, the primary applicant is the student (UG, PGT, PGR) and supervisor is the co-applicant.

Rebecca Nowell 1400601@chester.ac.uk

3. Co-applicants

Notes: List the names of all researchers involved in the study. Include their appointment or position held and their qualifications

Julie Kirkham, supervisor, PhD, MSc, BSc, FHEA

4. Start and end dates of the study

Notes: The title should be a single sentence

January 2018 to November 2018

5. Is this project subject to external funding?

Notes: Please provide details of the funding body, grant application and PI.

No

6. Briefly describe the purpose and rational of the research

Notes: (Maximum 300 words). In writing the rationale make sure that the research proposed is grounded in relevant literature, and the hypotheses emerge from recent research and are logically structured.
If this application is for a PGR/Staff funded project please attach any detailed research proposals as appropriate.

Play is one of the most natural and universal phenomena (Bruner, Cole & Lloyd, 1977). There are numerous types of play that are important to child development, in particular, pretend play (Kaugars & Russ, 2009). According to the early years foundation stages (EYFS, 2012), pretend play is crucial for effective learning. Sawyer (1997, cited in Bergen, 2002) found that children often used improvisational exchanges in their pretend play, rather than following a script. Sawyer claims that children who successfully do this acquire many skills, especially social and linguistic competence. When a child has difficulties with engaging in pretend play, they often have language problems (Jarrold, Butcher & Smith, 1996). This suggests that the two, pretend play and language development, are related, and children who are more engaged in pretend play may assist their development in their language skills. Thus provides the main rational for the present investigation.

Children begin to participate in pretend play and develop receptive and expressive language at approximately the same time in their development (Bergen, 2002). A number of theorists have suggested that this is due to both pretend play and language depending on the ability to use symbols, such as making one thing stand for another (Piaget, 1962 cited in Lewis, Boucher, Lupton, & Watson, 2000). Research has shown significant relationships between pretend play and both receptive and expressive language development (Lewis, Boucher, Lupton, & Watson, 2000). This suggests that looking at both expressive and receptive language is important in the study of pretend play.

Two processes of pretend play have been identified by Russ (2004, cited in Fehr & Russ, 2016) which are related to creativity, these are cognitive processes and affective processes. Russ defines cognitive processes as the involvement of imagination, symbolism, and organization of the story within the pretend play, whereas, affective processes involve emotional expression within the story. These two processes are investigated throughout the study of the relationship between pretend play and creativity (Fehr & Russ, 2016). Symbolism is important in the development of pretence, children who have the ability to perform symbolic acts that are self or other directed have a higher cognitive complexity of play (Overton & Jackson, 1973). However, there is a gap in the literature of the relationship of language and pretend play where these processes are specified. To the author's knowledge, there has not yet been any research conducted where cognitive and affective processes of pretend play has been investigated as separate components to test whether one form predicts language development more than the other, especially with regards to expressive and receptive language. Whether children symbolically pretend has also not been previously studied to have a relationship with language development, which is the rational for this research investigating the different types of pretend play.

This study will explore the relationship between (1) Cognitive aspect of play (2) Affective aspect of play (3) Pretend actions task AND (1) expressive language ability (2) receptive language ability.

It is hypothesised that there will be a significant positive relationship between these variables.

There will be a difference according to gender on the three types of play (cognitive aspect of play, affective aspect of play, and pretend actions task) and two types of language skills (expressive language ability and receptive language ability).

There will be a difference according to age on the three types of play (cognitive aspect of play, affective aspect of play, and pretend actions task) and two types of language skills (expressive language ability and receptive language ability).

The first hypothesis will analysed using a series of correlational analyses, with the potential for a multiple regression. The final two hypotheses will be analysed using two t-tests.

7a. Describe the methods and procedures of the study

Notes: (Maximum 500 words) Attach any relevant material (questionnaires, supporting information etc.) as appendices and summarise them briefly here (e.g. Cognitive Failures Questionnaire: a standardised self-report measure on the frequency of everyday cognitive slips). Do not merely list the names of measures and/or their acronyms. Include information about any interventions, interview schedules, duration, order and frequency of assessments. It should be clear exactly what will happen to participants. If this is a media based study describe and list materials include links and sampling procedure.

Contact will be made to recruit from Little Friends nursery through an email (see Appendix A). The researcher has had previous contact with the nursery through the PS304 module and conducted an observation there. The email will include the aims of the study, the method, and the ethical considerations. If the nursery manager agrees that the nursery is willing to take part in the study, and provides written consent which will be shown to the students supervisor, children's parents will then be sent an information sheet and opt out consent form (see Appendix B). This will inform them of what the study includes, and if they do not wish their child to take part they will be asked to return the form to the school office by a specified date. A verbal script will be used with the children (see Appendix C), this will explain what they will be asked to do and inform them of their right to withdraw even though their parents have consented.

The participants will be 30-40 children age three to five years old, with 15-20 children in each age group. The procedure is in two sessions, neither of which will be audio or video-recorded. Children will be given a unique identifying number; this will link their answers across the two sessions as well as their demographic characteristics (e.g. sex and age). Session 1will last a maximum of 20 minutes. The first measure will be the Preschool Language Scale-3 (PLS-3, Zimmerman, Steiner, Pond, Boucher & Lewis, 1997). This is a psychometrically viable instrument which was developed to assess language skills in children from birth to 6 years 11 months and has been widely used as a measure of language development in children (Conner, Kelly-Vance, Ryalls, & Friehe, 2014; Everitt, Hannaford, & Conti-Ramsden, 2013). This scale consists of two standardised subscales that assess Auditory Comprehension (AC) and Expressive Communication (EC). The AC subscale will be tested in Session 1, and is used to determine how much language is understood by a child. Testing begins at one year below the chronological age of the child. The child's responses will be scored on a Record Form (see Appendix D). There is a pass criterion for each set of tasks, if the child meets the criterion they score a 1, if they do not they score 0. An example question for the Auditory Comprehension is "Look at the children. Point to the one who is short", they will answer this using visual stimuli from the Picture Manual (see Appendix E). The test ends when the participant has received a score of 0 on five consecutive numbered tasks in a Subscale. In order to calculate the raw scores, the number of '0' scored are subtracted from the last Subscale task administered on the front of the Record Form. The second activity is the administration of the Affect in Play Scale – Brief Rating Version (APS-BR), a 5 minute observation of a standardised play task (Cordiano, Russ & Short, 2008) which has been widely used in previous studies (Chessa, 2013; Hoffmann & Russ, 2016). The participant will be given two puppets, a boy and a girl, as well as three small building blocks. They will be told to play with the puppets and blocks however they wish (see Appendix F). Their play behaviour will be scored on a four-point Likert scale. The cognitive aspects scored will include the organisation, which measures the quality of the plot and story complexity raging from a series of unrelated, disjointed events with no cause and effect (1) to an integrated plot with a beginning, middle and end (4); imagination, which measures the novelty and uniqueness of the play as well as the child's ability to use pretend and fantasy, this will range from no symbolism, transformations, or fantasy (1) to having many transformations, novel fantasy events, and the addition of other characters or unusual plot twists (4); and comfort of play, which measures the overall ability to play and the level of immersion in the play, ranging from distressed, and stopping and starting throughout the play (1) to being comfortable, involved, and enjoying the play (4). The affective aspects will be scored by the frequency and tone of the affective expressions, tone is based on the estimated amount of positive and negative affect units, ranging from predominantly negative affect dominating the play (1) to predominately positive affect dominating the play (4). This will be done by the student researcher who will have familiarised themselves with the scale beforehand and practiced the coding using observational play footage available on YouTube.

Session 2 will take place on a different day according to the nursery schedule lasting a maximum of 20 minutes. Children of this age are not in formal classes so there is less potential to disrupt their learning. The PLS-3 will be conducted for a second time, in this session the EC will be tested; this is used to evaluate the child's communication with others. An example question for the Expressive Communication is "Tell me what a fork is". The procedure will be the same as previously discussed. The second activity is the Pretend Actions Task, a 5 minute test to assess the differences in the developmental complexity of pretence (Overton & Jackson, 1973). This scale has previously been used by Kirkham and Kidd (2015). All participants will be asked to complete three action sequences directed towards to self and three directed towards the external world. The self-directed actions are: (a) pretend you are combing your hair, (b) pretend you are drinking from a cup, and (c) pretend you are brushing your teeth. For the externally directed part of the task, children are presented with a wooden block and a piece of paper and will be requested to: (a) pretend you are hammering this wooden block, (b) pretend you are cutting this wooden block with a knife, and (c) pretend you are cutting this piece of paper with some scissors. For each action the experimenter will document whether the child uses a body part to perform the action (e.g., using a finger to represent the toothbrush), or whether they use an imaginary object. Scoring will be conducted by the experimenter immediately after the action is performed, with a score of one attributed to each use of a symbolic object and 0 points for use of a body part. The maximum score is six points and the task usually takes less than 5 minutes.

The order of the sessions will be counterbalanced for each participant.

7b. Provide details of your contingency plan

Notes: Please briefly describe your contingency plan. (100 words)

If Little Friends nursery does not allow the participation of the children, or not enough children are recruited, other nurseries will be contacted. This will be done either through contacts of the supervisor from the PS7304 module or through contacts of the researcher.

If by the 9th of April, no nurseries allow participation, then an alternative questionnaire project will be undertaken, ready for the 20th of April ethics deadline.

8. Provide details of the previous experience of the procedures by the person conducting the study.

Notes: Say who will be undertaking the procedures involved and what training and/or experience they have. If supervision is necessary, indicate who will provide it.

The researcher does not have previous experiences of the procedures of conducting the language test or play tasks but will have thoroughly read the instruction manuals and literature that has previously utilised these tasks. Dr Kirkham will train the researcher to ensure they know the procedures of the tasks and that they can carry them out successfully. These are tasks that Dr Kirkham used in her Phd Research (see Kirkham, Kidd & Stewart, 2013; Kirkham & Kidd, 2015).

The student researcher is aware of the length of time it will take to collect the data and wishes to undertake the data collection to obtain research experience using standardised measures and working with children as she wishes to apply for the educational doctorate after

completing her MSc. She feels that this direct experience with children will strengthen her application. The supervisor has experience in supervising a previous student which used the same language tasks, similar play tasks and an additional non-verbal measure which had similar procedures and was approved by the ethics committee in 2014-2015.

9. Describe the ethical issues raised by this study and discuss the measures taken to address them.

Notes: Describe any discomfort or inconvenience that participants may experience. Include information about procedures that for some people could be physically stressful or might impact on the safety of participants, e.g. interviews, probing questions, noise levels, visual stimuli, equipment; or that for some people could be psychologically stressful, e.g. mood induction procedures, tasks with high failure rate, please include your distress protocol. Discuss any issues of anonymity and confidentiality as they relate to your study, refer to ethics handbook and guidance notes at the end of the form. If animal based include ethical issues relating to observation.

The language scale task has a potential of causing distress in that children may become tired or bored during the testing procedure. In order to prevent this, consent will be obtained from the nursery staff and from parents. Individual children will be asked to assent. If at any point the participant wants to stop the experiment, they can do and it will be taken as their right to withdraw. Participants can choose to take a break from the study if necessary, and the researcher will monitor them closely for signs of boredom or tiredness and stop the study.

Since the different tasks will be completed at different times, their name will be listed on a spreadsheet alongside their participant number, this will be stored on a password protected computer which will remain in a locked cupboard. Their scores will be recorded on a sheet of paper and then transferred onto a separate spreadsheet alongside their number. The sheets of paper which will contain their scores on all tasks will be stored in a locked briefcase in the locked cupboard; these will contain their participant number only. The spreadsheets will be deleted and all sheets of paper will be destroyed by a paper shredder once the marks of the thesis are released. These will be only available to the researcher and her supervisor. Once the participant has competed all tasks, a short debrief will be read out to them (see Appendix G), also a debrief form will be sent home to their parents describing the purpose of the study (see Appendix H).

The researcher has a valid DBS check. All children will be tested in a quiet corner of their classroom where the student researcher can be observed by the nursery staff at all times. If any member of staff leaves the room, the researcher will stop the study until they return. The researcher will have a risk protocol in place if the child discloses sensitive information during the play observation (see Appendix I, adapted from Haigh & Witham, 2013). If the participant demonstrates distress, either explicitly stating that they are experiencing stress or emotional distress OR exhibit behaviours suggestive that they are a victim of violence or danger with the puppets, the researcher will say “we can finish the play task now, you have done really well”. The researcher will notify the safeguarding officer or a member of staff if the safeguarding officer is not available, what was observed, and follow any procedures that they have in place for the nursery. The researcher does have recent safeguarding training.

10.Describe the participants of the study.

Notes: Describe the groups of participants that will be recruited and the principal eligibility criteria and ineligibility criteria. Make clear how many participants you plan to recruit into the study in total.

Based on previous research conducted by Fehr and Russ (2016) this study aims to collect data from 30-40 participants from Little Friends Nursery. They will be collected ages three to five years old, with 15-20 in each age group.

11. Describe the participant recruitment procedures for the study.

Notes: Gives details of how potential participants will be identified or recruited, please list any social media platforms that you will use and the message. Include all other advertising materials (posters, emails, letters, verbal script etc.) as appendices and refer to them as appropriate. Describe any screening examinations. If it serves to explain the procedures better, include as an appendix a flow chart and refer to it.

Contact with the nursery will be made via email (see Appendix A). Once they have allowed the students to take part, parents will be sent an information sheet and opt out consent form (see Appendix B) they will be asked to return the form to the nursery by a specified date if they do not want their child to take part. Participants will be tested in a quiet corner of the classroom – children at this age do not have formal classes so it will not disrupt their learning. However, children will be asked if they would like to take part in the task and will be able to decline if they would prefer to keep playing with their friends or taking part in nursery activities.

12. Describe the procedures to obtain informed consent

*Notes: Describe when consent will be obtained. If consent is from **adult participants**, give details of who will take consent and how it will be done. If you plan to seek informed consent from **vulnerable groups** (e.g. people with learning difficulties, victims of crime), say how you will ensure that consent is voluntary and fully informed.*
*If you are recruiting **children or young adults** (aged under 18 years) specify the age-range of participants and describe the arrangements for seeking informed consent from a person with parental responsibility. If you intend to provide children under 16 with information about the study and seek agreement, outline how this process will vary according to their age and level of understanding.*
How long will you allow potential participants to decide whether or not to take part?
What arrangements have been made for people who might not adequately understand verbal explanations or written information given in English, or who have special communication needs?
If you are not obtaining consent, explain why not.

The participants will not make written consent, their consent will be through the completion of the tasks. The can withdraw from the study at any time. Overall consent will be obtained from the nursery and then parents will be sent an information sheet and opt out consent forms (see Appendix B) they will be asked to return the form to the nursery by a specified date if they do not want their child to take part. Guidance will also be sought from the staff, even if their parents have given consent, as to whether the child should take part, for example, does the

child have any specific learning difficulties which may make the tasks difficult or potentially distressing for them.

13. Will consent be written?

Yes ☐ *No* ☒

*Notes: If **yes**, include a consent form as an appendix. If **no**, describe and justify an alternative procedure (verbal, electronic etc.) in the space below.*
Guidance on how to draft Participant Information sheet and Consent form can be found on PS6001 Moodle space and in the Handbook.

The participants will not provide written consent, their consent will be through the completion of the tasks. Overall consent will be obtained from the nursery and opt out consent from children's parents (see Appendix B). Guidance will also be sought from the staff, even if their parents have given consent, as to whether individual children should take part.

14. Describe the information given to participants. Indicate if and why any information on procedures or purpose of the study will be withheld.

Notes: Include an Information Sheet that sets out the purpose of the study and what will be required of the participant as appendices and refer to it as appropriate. If any information is to be withheld, justify this decision. More than one Information Sheet may be necessary.

An information protocol will be read out to each participant at the start of every new task (see Appendix C), this will inform the participants of their right to withdraw and that only the researcher and their supervisor will ever see the answers. It will also provide information on what to do if they feel affected by the study. The participants will be thanked for their participation and informed of the true purpose of the study. A debrief will be read out to the child once they have finished the study (See Appendix G) and a debrief sheet will be sent home to their parents (see Appendix H).

15. Indicate if any personally identifiable information is to be made available beyond the research team. (eg: a report to an organisation)

Notes: If so, indicate to whom and describe how confidentiality and anonymity will be maintained at all stages.

All information will be anonymous and only available to the researcher and their supervisor and second marker on the project. Final dissertation will be made available to the nursery if requested but not the scores of individual children. Only group findings will be reported in the final dissertation and all data will remain anonymous

16. Describe any payments, expenses or other benefits and inducements offered to participants.

Notes: Give details. If it is monetary say how much, how it will be paid and on what basis is the amount determined. Indicate RPS credits.

No payments or inducements will be offered to participants.

17. Describe the information about the investigation given to participants at the end of the study.

Notes: Give details of debriefings, ways of alleviating any distress that might be caused by the study and ways of dealing with any clinical problem that may arise relating to the focus of the study.

A debrief will be read out to the participant once they have finished the study (See Appendix G). The participants will be thanked for their participation. This will provide details of the study and the opportunity to ask any questions which they may have. A debrief form will be sent home to parents via the nursery to inform them of purpose of the study (see Appendix H).

18. Describe data security arrangements for during and after the study.

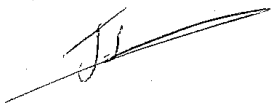
Notes: Digital data stored on a computer requires compliance with the Data Protection Act; indicate if you have discussed this with your supervisor and describe any special circumstances that have been identified from that discussion. Say who will have access to participants' personal data and for how long personal data will be stored or accessed after the study has ended.

The participants name will initially be written down on a spreadsheet alongside their unique participant number this will be stored on a password protected computer which will remain in a locked cupboard. Their scores will be recorded on a sheet of paper and then transferred onto a separate spreadsheet alongside their number. Once all children have been tested their names will be deleted from the original spreadsheet so that they and their scores cannot be identified. The sheets of paper will be stored in a locked briefcase, these will contain their participant number only. The spreadsheets will be deleted and all sheets of paper will be destroyed by a paper shredder once the marks of the thesis are released. These will be only available to the researcher and her supervisor.

SIGNATURES OF THE RESEARCH TEAM

Notes: The primary applicant and all co-applicants must sign and date the form. Scanned or electronic signatures are acceptable.

Rebecca Nowell
02/03/2018



Julie Kirkham 02/02/2018

University of Chester

DEPARTMENT OF PSYCHOLOGY
ETHICS REVIEW FORM

When completing this form, please highlight the appropriate response to each question (e.g. underline, italicise, delete unwanted responses). Make any comments that you feel should be raised either next to each section or at the end in the general comments box.

Name of applicant: **Rebecca Nowell**

Project title: The relationship between pretend play skills and language development in children age three to five

Applicant status: UG **PGT** PGR Staff

1. **Has the applicant signed and dated the form?**
   a) **Yes** / No → Return to applicant for signature before continuing with review process.

2. **What is the submission type?**
   a) First submission to this or any other committee? Yes / No

   b) Resubmission of a rejected application by this committee
      - Is there a summary of the requirements of the committee and is the original application attached? Yes / **No**→ Return to applicant for full details

   c) Revised submission intended to replace an application approved by this committee
      - Is the original application attached?: Yes / No→ Return to applicant for full details

   d) First submission to this committee; has been submitted to another committee.
      - Is the original application attached? Yes / No→ Return to applicant for full details

3. **Research Plan and Methodology (Qu 4, 6 & 7)**
   a) Are the timescales provided appropriate?
   Yes / No Comments:

   b) Are there contingency details?
   Yes / No Comments:

   c) Is the study well formulated in terms of drawing on the relevant literature and is it methodologically, analytically and scientifically sound?
   Yes / No Comments:

   d) Are appropriate debrief details provided?
   Yes / No Comments:

   e) Has the applicant provided appropriate details of where the research will take place?
   Yes / No Comments: Nursery will be approached for consent after initial ethical approval has been granted

   f) Has the applicant provided appropriate details concerning data analysis?

Yes / No Comments:

4. **Ethical Issues (Qu 9)**
   a) Is there consideration of how to minimise, manage and monitor issues of distress and harm, however minor?
   Yes / No Comments:

   b) Are appropriate details regarding the use and management of deception provided?
   Yes / No / **N/A** Comments:

   c) Has the applicant provided appropriate details including regarding permission and appropriate health and safety information for conducting the study at the proposed location? Is the necessary documentation attached?
   Yes / **No** Comments: Nursery to be approached for consent after the ethics committee has granted provisional ethics approval

   d) Has the applicant provided an appropriate overview of how they would manage participant distress?
   Yes / No / N/A (online study) Comments:

5. **Sample size, participants and recruitment (Qu 10 – 14)**
   a) Has the applicant provided appropriate details of the sample and how it will be identified?
   Yes / No Comments:

   b) If using social media for recruitment have details been provided on **NA**
      a. Proposed sites
      Facebook ☐
      Twitter ☐
      Instagram ☐
      Other, please Specify
      Comments:

      b. Social media messages?
      Facebook ☐
      Twitter ☐
      Instagram ☐
      Other, please Specify
      Comments:

   c) Has the applicant provided appropriate details and attached the necessary documentation concerning their recruitment procedures? In particular, have they appropriately considered how to minimise, manage and monitor issues of distress and harm during recruitment?
   Yes / No Comments:

   d) Are there appropriate details on the information sheet regarding the following (if applicable):
      - Purpose of the study **Yes** / No / N/A
      - Explanation of why participant has been chosen **Yes** / No / N/A
      - Details of materials/stimuli/qualitative topics **Yes** / No / N/A
      - Notification that materials used in the study are not diagnostic tools/therapy **Yes** / No / N/A
      - Notification that participation is voluntary **Yes** / No / N/A
      - Incentives/Compensation **Yes** / No / N/A

- Informed consent — **Yes** / No / N/A
- Procedure — **Yes** / No / N/A
- Time commitment — **Yes** / No / N/A
- Right to not answer questions — **Yes** / No / N/A
- Withdrawal — **Yes** / No / N/A
- How partially collected data will be used — **Yes** / No / N/A
- Benefits and risks of participating — **Yes** / No / N/A
- Anonymity — **Yes** / No / N/A
- Confidentiality — **Yes** / No / N/A
- Dissemination information — **Yes** / No / N/A

6. Dissemination (Qu15)

a) Has the applicant provided appropriate details concerning research dissemination?
Yes / No Comments:

b) Are there appropriate details regarding any specific considerations about sharing the research?
Yes / No Comments:

7. Participant payments and inducements (Qu16)

a) Are there appropriate details regarding compensation arrangements?
Yes / No / **N/A** Comments:

8. Debrief (Qu17)

a) Are appropriate debrief details provided?
Yes / No / N/A Comments:

b) Are there appropriate details about how participants will be debriefed should they decide to withdraw from an online study?
Yes / No / **N/A (not online study)** Comments:

9. Data Security (Qu18)

a) Has the applicant provided appropriate details concerning data protection and storage?
Yes / No Comments:

b) Have security issues been properly considered?
Yes / No Comments:

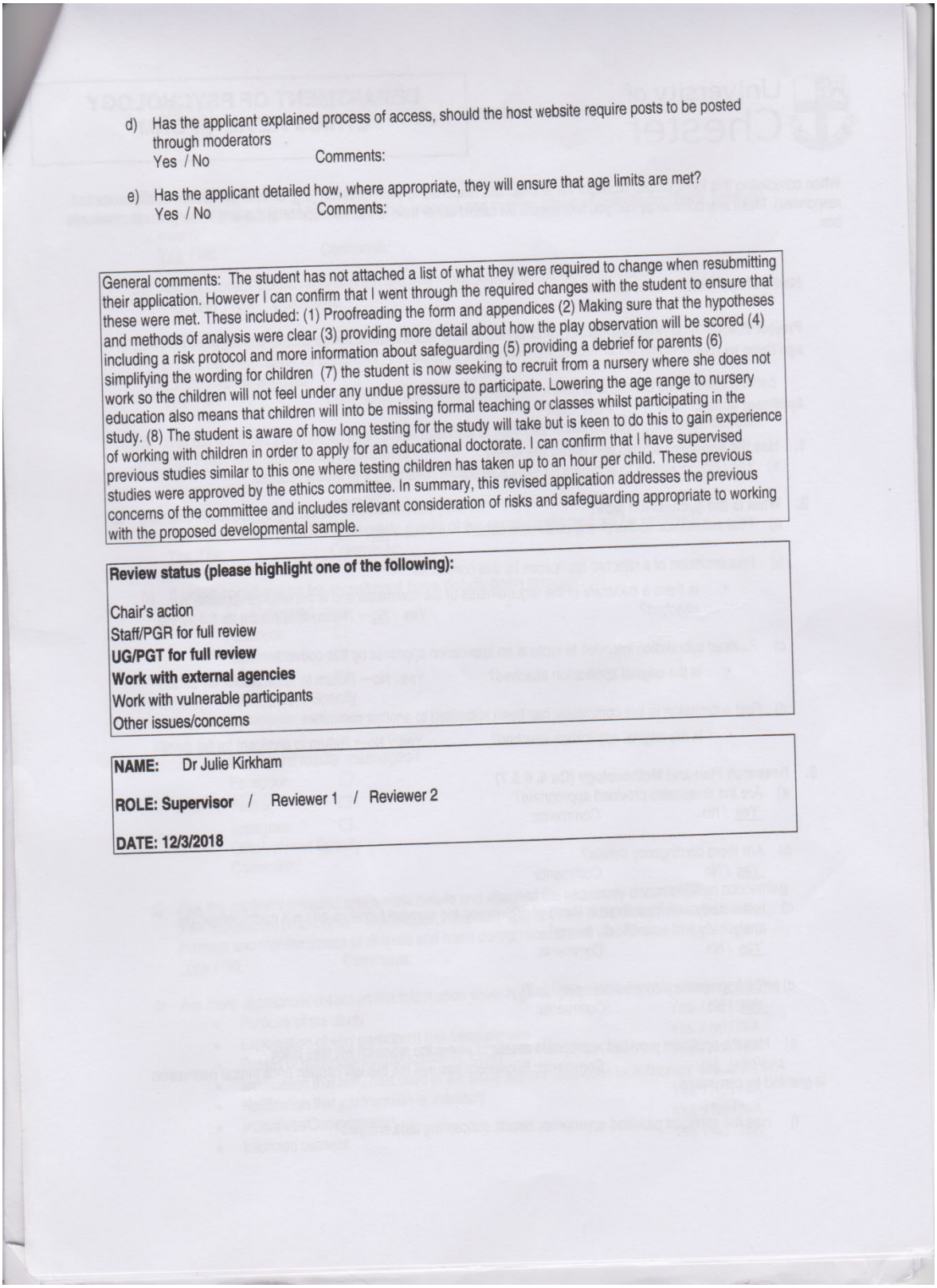
c) Are there appropriate details regarding how privacy and confidentiality will be maintained during dissemination?
Yes / No Comments:

10. Forum-based projects N/A

a) Is the content of the website openly accessible?
Yes / No Comments:

b) Has the applicant discussed what will happen with users who expressly state that they do not wish their responses to be used for research purposes?
Yes / No Comments:

c) Has the applicant explained how online data collected will be anonymized?
Yes / No Comments:



d) Has the applicant explained process of access, should the host website require posts to be posted through moderators
Yes / No Comments:

e) Has the applicant detailed how, where appropriate, they will ensure that age limits are met?
Yes / No Comments:

General comments: The student has not attached a list of what they were required to change when resubmitting their application. However I can confirm that I went through the required changes with the student to ensure that these were met. These included: (1) Proofreading the form and appendices (2) Making sure that the hypotheses and methods of analysis were clear (3) providing more detail about how the play observation will be scored (4) including a risk protocol and more information about safeguarding (5) providing a debrief for parents (6) simplifying the wording for children (7) the student is now seeking to recruit from a nursery where she does not work so the children will not feel under any undue pressure to participate. Lowering the age range to nursery education also means that children will into be missing formal teaching or classes whilst participating in the study. (8) The student is aware of how long testing for the study will take but is keen to do this to gain experience of working with children in order to apply for an educational doctorate. I can confirm that I have supervised previous studies similar to this one where testing children has taken up to an hour per child. These previous studies were approved by the ethics committee. In summary, this revised application addresses the previous concerns of the committee and includes relevant consideration of risks and safeguarding appropriate to working with the proposed developmental sample.

Review status (please highlight one of the following):

Chair's action
Staff/PGR for full review
UG/PGT for full review
Work with external agencies
Work with vulnerable participants
Other issues/concerns

NAME: Dr Julie Kirkham

ROLE: Supervisor / Reviewer 1 / Reviewer 2

DATE: 12/3/2018

University of Chester

DEPARTMENT OF PSYCHOLOGY
ETHICS REVIEW FORM

When completing this form, please highlight the appropriate response to each question (e.g. underline, italicise, delete unwanted responses). Make any comments that you feel should be raised either next to each section or at the end in the general comments box.

Name of applicant: **Rebecca Nowell**

Project title: The relationship between pretend play skills and language development in children age three to five

Applicant status: UG PGT PGR Staff

1. **Has the applicant signed and dated the form?**
   a) Yes / No → Return to applicant for signature before continuing with review process.

2. **What is the submission type?**
   a) First submission to this or any other committee? Yes / No

   b) Resubmission of a rejected application by this committee
      - Is there a summary of the requirements of the committee and is the original application attached? Yes / No→ Return to applicant for full details

   c) Revised submission intended to replace an application approved by this committee
      - Is the original application attached?: Yes / No→ Return to applicant for full details

   d) First submission to this committee; has been submitted to another committee.
      - Is the original application attached? Yes / No→ Return to applicant for full details

3. **Research Plan and Methodology (Qu 4, 6 & 7)**
   a) Are the timescales provided appropriate?
   Yes / No Comments:

   b) Are there contingency details?
   Yes / No Comments:

   c) Is the study well formulated in terms of drawing on the relevant literature and is it methodologically, analytically and scientifically sound?
   Yes / No Comments:

   d) Are appropriate debrief details provided?
   Yes / No Comments:

   e) Has the applicant provided appropriate details of where the research will take place?
   Yes / No Comments: Supervisor assures me this will happen once ethical permission is granted by committee

   f) Has the applicant provided appropriate details concerning data analysis?

Yes / No Comments:

4. **Ethical Issues (Qu 9)**
   a) Is there consideration of how to minimise, manage and monitor issues of distress and harm, however minor?
   Yes / No Comments:

   b) Are appropriate details regarding the use and management of deception provided?
   Yes / No / N/A Comments:

   c) Has the applicant provided appropriate details including regarding permission and appropriate health and safety information for conducting the study at the proposed location? Is the necessary documentation attached?
   Yes / No Comments: see earlier comment – will be approached once ethics granted

   d) Has the applicant provided an appropriate overview of how they would manage participant distress?
   Yes / No / N/A (online study) Comments:

5. **Sample size, participants and recruitment (Qu 10 – 14)**
   a) Has the applicant provided appropriate details of the sample and how it will be identified?
   Yes / No Comments:

   b) If using social media for recruitment have details been provided on
      a. Proposed sites
      Facebook ☐
      Twitter ☐
      Instagram ☐
      Other, please Specify
      Comments:

      b. Social media messages?
      Facebook ☐
      Twitter ☐
      Instagram ☐
      Other, please Specify
      Comments:

   c) Has the applicant provided appropriate details and attached the necessary documentation concerning their recruitment procedures? In particular, have they appropriately considered how to minimise, manage and monitor issues of distress and harm during recruitment?
   Yes / No Comments:

   d) Are there appropriate details on the information sheet regarding the following (if applicable)**: All Yes**
      - Purpose of the study Yes / No / N/A
      - Explanation of why participant has been chosen Yes / No / N/A
      - Details of materials/stimuli/qualitative topics Yes / No / N/A
      - Notification that materials used in the study are not diagnostic tools/therapy Yes / No / N/A
      - Notification that participation is voluntary Yes / No / N/A
      - Incentives/Compensation Yes / No / N/A
      - Informed consent Yes / No / N/A

- Procedure — Yes / No / N/A
- Time commitment — Yes / No / N/A
- Right to not answer questions — Yes / No / N/A
- Withdrawal — Yes / No / N/A
- How partially collected data will be used — Yes / No / N/A
- Benefits and risks of participating — Yes / No / N/A
- Anonymity — Yes / No / N/A
- Confidentiality — Yes / No / N/A
- Dissemination information — Yes / No / N/A

6. Dissemination (Qu15)

a) Has the applicant provided appropriate details concerning research dissemination?
Yes / No Comments:

b) Are there appropriate details regarding any specific considerations about sharing the research?
Yes / No Comments:

7. Participant payments and inducements (Qu16)

a) Are there appropriate details regarding compensation arrangements?
Yes / No / N/A Comments:

8. Debrief (Qu17)

a) Are appropriate debrief details provided?
Yes / No / N/A Comments:

b) Are there appropriate details about how participants will be debriefed should they decide to withdraw from an online study?
Yes / No / N/A (not online study) Comments:

9. Data Security (Qu18)

a) Has the applicant provided appropriate details concerning data protection and storage?
Yes / No Comments:

b) Have security issues been properly considered?
Yes / No Comments:

c) Are there appropriate details regarding how privacy and confidentiality will be maintained during dissemination?
Yes / No Comments:

10. Forum-based projects

a) Is the content of the website openly accessible?
Yes / No Comments:

b) Has the applicant discussed what will happen with users who expressly state that they do not wish their responses to be used for research purposes?
Yes / No Comments:

c) Has the applicant explained how online data collected will be anonymized?
Yes / No Comments:

d) Has the applicant explained process of access, should the host website require posts to be posted through moderators
Yes / No Comments:

e) Has the applicant detailed how, where appropriate, they will ensure that age limits are met?
Yes / No Comments:

General comments: Although the previous from was not attached the supervisor (Julie) sent me the requirements and these seem to have been met. Once methods etc have been approved permission proof from the nursery to be approached would be needed prior to full ethics being granted.

Review status (please highlight one of the following):

Chair's action
Staff/PGR for full review
UG/PGT for full review
Work with external agencies
Work with vulnerable participants
Other issues/concerns

NAME: Liz Whelen

ROLE: Supervisor / Reviewer 1 / Reviewer 2

DATE: 15/3/18